



Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.

SECTOR 7 — CHART INFORMATION

SECTOR 7

HARIMA NADA AND BISAN SETO

Plan.—This sector first describes Harima Nada, then Bisan Seto. The sector includes the important ports of Higashi-Harima Ko and Himeji Ko, on the N side of Harima Nada; Mizushima Ko, on the N side of Bisan Seto; and Sakaide Ko, on the S side of Bisan Seto.

Harima Nada

7.1 Harima Nada (34°30'N., 134°35'E.) lies between Awaji Shima to the E and Shodo Shima to the W. The recommended route through the Naikai runs from the W entrance to Akashi Kaikyo, to the E entrance of Bisan Seto, a distance of about 40 miles. There are general depths of 20.1 to 40m in Harima Nada, except in the W entrance to Akashi Kaikyo, where there are shoals with depths of less than 10.1m. The S shore is steep-to, with a few scattered rocks, but on the N side there are a number of islands, rocks, and shoals. There is a least depth of 23m on the recommended route through Harima Nada, and depths of over 20m within 1 mile N and S of the center of the fairway.

Caution.—A dangerous wreck is situated about 0.9 mile SSE of Harima Nada Fairway Lighted Buoy No. 6; another wreck lies approximately 1.8 miles NE of Harima Nada Fairway Lighted Buoy No. 6.

Several fish havens lie close to the recommended track between Harima Nada Fairway Lighted Buoy No. 4 and Harima Nada Fairway Lighted Buoy No. 6.

The coast from **E Saki** (34°36'N., 135°00'E.), near the N end of Awaji Shima to Ei Saki, about 12 miles SW, is cliffy in places. The latter point is a cliffy headland, 41m high.

Shikano Se (Sika-no-Se), on the N side of the fairway and centered about 10 miles WSW of E Saki, is a rocky bank, covered with sand and pebbles, with a least depth of 2.2m, and extending for about 3 miles in an ENE-WSW direction; it is marked midway on its S side by a lighted buoy.

A shoal, with a depth of 7.6m, lies about 1 mile E of Shikano Se; shoals, with depths of less than 10.1m, extend about 1 mile N and 1.5 miles NE. A lighted buoy is moored about 0.2 mile E of the NE end of the shoal area.

Murotsuno Se (Murotu-no-Se) lies on the S side of the fairway, parallel with, and 3 miles from Shikano Se; it is a sandy bank, with a least depth of 8.2m. East Saki Light, bearing 068°, and in line with Hachibuse Yama, leads N and clear of Murotsuno Se.

Many fish havens are situated between Murotsuno Se and Shikano Se, and also on Matsuo and Takakura Se.

7.2 Joryuji Yama (Zyoryuzi Yama) (34°30'N., 134°55'E.), a mountain, 515m high, lies about 7 miles SSW of E Saki, and appears as the highest mountain on the N end of Awaji Shima.

Okado Hana (34°26'N., 134°20'E.), the SE extremity of Shodo Shima, is a cliffy headland; it rises to two hills, the S of



E Saki Light

which is 159m high. A light is shown from the point. There is a signal station at Okado Hana, and by day weather signals are shown from it.

Funoko Shima, an islet, 106m high, lies about 0.5 mile ENE of Okado Hana, to which it is connected by a reef which dries. Goishi Yama, a sharp peak, 435m high, with many towering crags, is conspicuous about 2 miles N of Okado Hana.

Anchorage can be obtained off the N side of Funoko Shima, in a depth of about 20m, but it is exposed NE.

Mizunoka Iwa, a rock, 3.1m high, lies NE about 5.5 miles of Okado Hana, and 3 miles E of Shodo Shima. Close E, a rock, with a depth of 7.6m, is marked E by a lighted buoy. Nakase Iwa, a rock, with a least depth of 1.6m, lies about 1 mile NW of Mizunoka Iwa.

Ofukube Shima, flat-topped and 57m high to the tops of the trees, lies about 2.5 miles W of Okado Hana; an islet, 20m high and conical, lies about 137m off the SE end of the island, to which it is connected by a drying reef.

Jizo Saki (Zizo Saki), the S extremity of Shodo Shima, lies about 5 miles WSW of Okado Hana, and is faced with steep cliffs; a light is shown from the headland. A racon transmits from the lighthouse. A hill, with two rounded summits, is prominent N of the headland; the N summit is 302m high and the higher of the two.

Umaga Hana, about 4 miles SSE of Jizo Saki, is a steep cliffy point, marked by a light. O-gushi Saki (Okusi Saki), about 2.5 miles farther NW, is well-wooded and 18.9m high; it rises to an elevation of 145m, about 0.3 mile S.

Goken San, 370m high, with a conspicuous rocky summit, lies about 5.5 miles SW of Jizo Saki, and is the highest mountain in the vicinity.

Directions.—Vessels should navigate W on a course of 248° and E on a course of 068° on the line of Harima Nada Fairway Lighted Buoy No. 1 to Harima Nada Fairway Lighted Buoy No. 6, and in the vicinity of Shikano Se, should not deviate more than 1 mile from the center of the fairway. The buoys are spaced at intervals of 5 to 5.5 miles.

The tidal currents are weak on the recommended track, but vessels are set S during the flood current and N by the ebb current. Vessels eastbound between Okado Hana and Shikano Se should guard against being set off the track.

At night, eastbound vessels should not enter the red sector of E Saki Light until clear of Shikano Se. There are many fishing vessels in the vicinity of Shikano Se and Awaji Shima; in particular, many fishing boats cross the fairway from March to June (0300 to 0400 and 0700 to 0900). In this vicinity it is frequently difficult to distinguish the lighted buoys until close to them.

Caution.—From October to May, seaweed cultivation facilities are situated on Shikano Se and within 1.5 miles of the W coast of Awaji Shima. Lighted buoys with flashing lights are placed around the seaweed cultivation grounds.

Vessels carrying dangerous cargo are required to carry emergency towing wires forward and aft when navigating through Harima Nada. (See paragraph 6.16, *Osaka Wan*, for information on fire wires.)

Harima Nada—East Side

7.3 The NW coast of Awaji Shima, from E Saki to Ei Saki, about 12 miles SW, is generally cliffy. From Ei Saki to Kariko Saki, about 10.5 miles farther SW, the coast is backed by flat-topped hills except in the vicinity of the mouth of Mihara Kawa, about 2 miles E of Kariko Saki; the coast is bordered by sandy beaches except for two rocky points. Maruyama Saki, about 3 miles SW of Kariko Saki, has a flat summit, 24m high and wooded; it is joined to the mainland by a low isthmus, and appears as an island from a distance. The latter point is backed by mountains, and is a good landmark in the approach to Naruto Kaikyo.

Sen San (34°21'N., 134°49'E.), near the center of Awaji Shima, is 448m high and has a shape resembling Mount Fuji.

Toshima Ko is located about 5 miles SW of E Saki and is protected by breakwaters. A light is shown on the head of the N breakwater. Yoko Se, with a depth of 1m, extends about 1 mile WSW of Toshima Ko. Anchorage, sheltered from SE winds, can be taken, in depths of 10.1 to 14.9m, sand, good holding ground, off Toshima Ko; caution is necessary regarding Yoko Se and the tidal currents. Farther SW, between Toshima Ko and Gunge Ko, about 6 miles SW, the bottom is steep to outside the 10m curve, but large vessels can obtain anchorage, in about 14m, sand, fair holding ground.

Myojin Misaki, about 1.5 miles SW of Ei Saki is a white cliffy point with a dense growth of trees in its upper part; it is joined to Awaji Shima by a narrow isthmus and appears as an islet.

Anchorage, sheltered from E to S winds, can be taken off the mouth of **Mihara Kawa** (34°20'N., 134°44'E.), in depths of 12.8 to 14.6m, mud.

Naruto Kaikyo (34°14'N., 134°39'E.) is described in paragraph 6.11.

Harima Nada—South Side

7.4 Hiketa Wan, about 10 miles W of Naruto Kaikyo, is open N and has sandy shores. **Hiketa Ko** (34°14'N., 134°25'E.), a small local harbor, lies in the W part of the bay. Hiketa Hana, the W entrance point of the bay, is marked by a light. A lighted buoy is moored 1.25 miles NE of Hiketa Hana. A submerged rock and a rock, awash, lie about 0.2 mile and 0.8 mile E, respectively, of the point. Matsu Shima, about 2 miles E of Hiketa Hana, is the outermost of several islets in the entrance of Hiketa Wan; it is about 410m long, 37m high, with pine trees on it. Mitsu Shima, a rocky islet, 37m high, with pine trees on it, lies about 0.4 mile WSW of Matsu Shima. Tsunen Shima, 1.9m high, lies about 320m farther WSW.

Anchorage can be taken, in 9.2 to 16.5m, in Hiketa Wan; the holding ground is good where the bottom is mud. Care is needed to avoid fishing nets (June to January) and seaweed cultivation grounds (October to April), which are to be found in all parts of the bay.

Kabukoshi Saki (34°15'N., 134°23'E.), about 2.5 miles NW of Hiketa Hana, is surmounted by an isolated hill with a pointed summit. Yoji Yama, an isolated hill with a pointed summit, rises to an elevation of 187m about 0.8 mile SE of Kabukoshi Saki. A reef extends about 90m NE of the point; a pointed rock is visible on the reef.

Futago Shima, about 0.5 mile NE of Kabukoshi Saki, consists of two rocky islets, each 26m high, and covered with pine trees. There are two above-water rocks close SE of Futago Shima, and the channel inshore of the islets should not be used.

Hitotsu Shima, a rocky islet, 21m high and covered with pine trees, lies about 1 mile NNW of Kabukoshi Saki; there are some high rocks on its N side.

Sombommatsu Ko (34°15'N., 134°21'E.), a small harbor sheltered by breakwaters, lies about 1.8 miles WSW of Kabukoshi Saki, in the central part of Matsubara Ura. A chimney, 30m high, is conspicuous near the harbor. Fish and oyster cultivation grounds lie up to 1 mile offshore E and W of Sombommatsu Ko.

Anchorage.—Matsubara Ura affords good anchorage during offshore winds, with good holding ground.

7.5 Marukame-jima, 69m high, with Me-jima, 45m high to the tops of the trees, close S, lies about 2.3 miles NW of Sombommatsu Ko.

Mashino Wan (Umasino Wan) is entered between Marukame-jima and Ube Yama, about 2 miles W. The shores consist of sandy beaches separated by rocky headlands. A light is shown from a red tower at Wakimoto Ko on the W shore of the bay. Fish havens are situated in the bay. Ube Yama is an isolated flat-topped hill, 57m high, with a steep cliff on its E side. Dangerous rocks, with a rock 1.9m high near the outer end, extend about 0.5 mile NE of the W entrance point of the bay. Nako Shima, 32m high, lies about 0.3 mile N of Ube



Akashi Ko Breakwater Lights

Yama. Kinu-jima, an islet, 32m high, lies about 0.3 mile off-shore in the E part of the bay. Reefs and rocks lie between the islet, the shore S, and Me-jima. Anchorage can be obtained, in about 9.2m, about 0.3 mile W of Kinu-jima, or in greater depths N of the islet, with a mud bottom.

Tsuda Wan (Tuda Wan) (34°18'N., 134°15'E.) is entered between Nako Shima and Taka Shima, nearly 2 miles N. The latter islet is 43m high and round-topped; Okino Sowai, a rock awash and steep-to, lies about 0.3 mile ENE of Taka Shima. Baku Iwa, a pointed rock, 5.8m high, lies about 0.3 mile NW of Taka Shima. A submarine wave recorder, connected to the shore by a submarine cable, is situated in the middle part of Tsuda Wan.

Tsuda Ko, a local harbor, lies at the head of the bay. A light is shown from a red tower. Ametaki Yama rises to an elevation of 254m, about 0.8 mile SW of Tsuda Ko.

Anchorage.—Good anchorage can be obtained by large vessels in Tsuda Wan, in a depth of 11.5m, with Nako Shima bearing 160° and Ametaki Yama bearing 230°. Small vessels anchor nearer the head of the bay according to draft. Winds between the NNE and ESE send a heavy sea into the bay. There are seaweed cultivation grounds from October to April within 1.5 miles of the shore of the bay.

Toraga Hana (34°20'N., 134°16'E.), about 0.8 mile NNW of Naka Shima, is a steep cliffy point; it rises to Toraga Mine, 307m high, about 1 mile SW. Umaga Hana lies about 1.3 miles NW of Toraga Hana.

Oda Wan is entered between Umaga Hana and O-gushi Saki, about 2.3 miles WNW. The bay is free of dangers except for Ikanago Se, a rock with a depth of 10.1m, about 0.8 mile E of O-gushi Saki. Oda Wan affords safe anchorage in adequate

depths, except during N winds. Several fish havens exist within 0.3 mile of the W shore of the bay.

Harima Nada—North Side

7.6 In the N part of Harima Nada are the important ports of Higashi-Harima Ko, Himeji Ko, and Aioi Ko. There is traffic of large vessels in and out of the above ports, but there is a very large amount of small vessel traffic navigating E and W in the Naikai.

The route through the area is indicated by Harima Nada North Fairway Lighted Buoy No. 3 (34°33'N., 134°08'E.) through Harima Nada Fairway Lighted Buoy No. 10 (34°38'N., 134°49'E.). There is a depth of about 11m in the E part of Harima Nada North Fairway.

Caution.—Caution is necessary from October to May due to seaweed cultivation equipment, marked by lighted buoys, off the coast between **Akashi Ko** (34°38'N., 135°00'E.) and **Ako Ko** (34°43'N., 134°23'E.), except in the harbor entrance channels and in the vicinity of Ieshima Gunto and Shikano Se. There are also many net and line fishing vessels in the vicinity of Harima Nada North Fairway, particularly E of Kami Shima and N of Tanga Shima. It is also necessary to avoid the shoals in the W entrance to Akashi Kaikyo and the dangerous rocks, Kami-Shizumo and **Shimo-Shizumo** (34°42'N., 134°30'E.), N of Ieshima Gunto.

Akashi Kaikyo to Himeji Ko

7.7 The N part of Harima Nada, from Akashi Kaikyo to Himeji Ko (34°46'N., 134°38'E.), is bordered by a succession of industrial areas. The coast is a low plain. The chimneys of

the steel works and generator stations at Higashi-Harima Ko and Himeji Ko are conspicuous landmarks. The area in the vicinity of Kiba (34°46'N., 134°44'E.), close E of Himeji Ko, is the only place where the mountains approach the coast.

A bank, with depths of less than 10.1m, extends to about 5 miles WSW of Akashi Ko. Kantama, with a least depth of 4.9m, lies near the W end of the bank. A lighted buoy is moored S of Kantama. Takakura Se, about 1.5 miles SW of Kantama, has a least depth of 7.8m and is marked E by a lighted buoy. Matsuo and Shikano Se, farther SW, were [previously described in paragraph 7.1](#).

In the vicinity of Harima Nada North Fairway Lighted Buoy No. 10, where there are depths of 11.6 to 17m, a sandwave extending about 3 miles E-W and 2 miles N-S was reported.

Higashi-Harima Ko (34°42'N., 134°50'E.)

[World Port Index No. 61568](#)

7.8 Higashi-Harima Ko, in the NE part of Harima Nada, lies about 6 miles WNW of Akashi Ko, and is a major port consisting of the former harbors of Futami Ko, Befu Ko, Takasago Ko, and Iho Ko. The cities of **Kakogawa** (34°42'N., 134°55'E.) ([World Port Index No. 61573](#)) and Takasago are developing into industrial areas, with berthing facilities for large vessels.

The harbor, from SE to NW, consists of Futami Chiku (Hutami), Befu Chiku (Behu), Takasago Chiku, and Iho Chiku. A dredged passage leads into Befu Chiku. Kako Kawa discharges into the harbor, E of Takasago.

Winds—Weather

The most frequent winds are NE in spring and summer. South winds are most frequent in summer; W winds are most frequent in winter.

Tides—Currents

The diurnal inequalities are large at Takasago, and a single tide per day is frequently observed. The mean tidal rise at springs is 1.2m.

In the vicinity of the dredged passage, the flood tidal current flows NW with a velocity of about 1 knot, and the ebb tidal current flows SE with a velocity of about 1.8 knots.

Depths—Limitations

The passage leading into Befu Chiku is 400m wide and dredged to 17.1m. Dredged depths of 17.1m extend farther NNE into the harbor to the middle part of East Wharf, which lies on the W side of the harbor. A berth, in the middle part of East Quay, can accommodate vessels up to 160,000 dwt, in a depth of 17.1m.

The LPG Jetty, on the inner side of West Breakwater at Befu Chiku, has depths of 14 to 17.1m alongside, and can accommodate vessels up to 70,000 dwt.

Shoals, with depths of 4.8m and 3.6m, lie about 0.2 mile SSW and 410m SSE, respectively, of the head of East Breakwater at Befu Chiku.

West Wharf, inside the breakwater on the left bank of the mouth of Kako Kawa, can accommodate vessels up to 35,000 dwt at Berth W5, at its S end. Berth W6, close SE of West Wharf, can accommodate vessels up to 55,000 dwt, in a depths of 12m.

The reclaimed land on the right bank of Arai Kawa, close W of Takasago, has a berth on its E side with a depth of 7m alongside. A dolphin berth, with a depth of 8m alongside, lies on the W side of the reclaimed land. To the W of this berth, a breakwater extends SSW from the shore. A light is shown from its head.

Aspect

Lights, in line bearing 022.3°, lead to the inner end of the harbor.

A factory, with a pale green roof, is conspicuous about 0.3 mile ENE of the base of E breakwater at Befu Chiku. Three cranes are conspicuous at the base of the same breakwater.

A group of chimneys of a steelworks are conspicuous on the W side of the harbor at Befu Chiku; the highest two are 174m high. Two cranes, each 35m high and painted light green, are situated near the base of W breakwater at Befu Chiku.

Two chimneys, 125m and 105m high and painted red and white, are situated about 0.3 mile N of Takasago W breakwater.

Two chimneys at Iho Chiku, on the right bank of Arai Kawa, are 123m and 112m high, and painted red and white. The chimney of a generating plant, close W, is 182m high and also painted red and white.

An overhead power cable, with a vertical clearance of 58m, spans Arai Kawa close within its mouth.

Pilotage

Pilotage is not compulsory. Inland sea pilots are available at Wadi-Misaki (off Kobi), and the harbor pilot is available at the anchorage from sunrise to sunset. An inland sea pilot is compulsory for vessels over 10,000 grt; a harbor pilot is not compulsory.

Vessels are prohibited from approaching within 50m of vessels loaded with LPG, which are berthed at the LPG jetties at Befu Chiku and Iho Chiku.

Himeji Ko (34°46'N., 134°41'E.)

[World Port Index No. 61567](#)

7.9 Himeji Ko (Himezi Ko) lies close W of Higashi-Harima Ko, in the N part of Harima Nada. The harbor is divided, from E to W, into Higashi Ku (Higasi Ku), Shikama Ku (Sikama Ku), Hirohata Ku, Aboshi Ku (Abosi Ku), and Nishu Ku. East Passage (Higashi Passage) entrance (34°45'N., 134°41'E.) leads into Higashi Ku; Hirohata Passage entrance (34°44'N., 134°37'E.) leads into Hirohata Ku.

The city of Himeji is the central city for commerce and industry in the Harima Plain. In the coastal area of the harbor there are large factories, steelworks, and generating stations.

Winds—Weather

At Himeji Ko, the wind is mostly NE in the spring and autumn, S in the summer, and W in the winter.

The directions of the harbormaster must be followed during the time of a typhoon. In Hirohata Ku, if there is a strong possibility that a typhoon will approach, and strong SE winds will blow, large vessels berthed at Central Wharf should leave the harbor.

Tides—Currents

The diurnal inequalities of the tide are large at Hirohata, and a single tide per day is frequently observed. The mean tidal rise at springs is 1.2m and at HHW is 1.5m.

Between the entrance to Hirohata Passage and the harbor entrance the flood tidal current generally sets W and the ebb current E, but they are both weak. In the anchorage at Hirohata Ku, there is no tidal current.

Depths—Limitations

An offshore pipeline berth, consisting of a lighted mooring buoy painted in red and white stripes, is moored in depths of 20.5m, about 3 miles SSW of Higashi Ku harbor entrance; it can accommodate vessels up to 250,000 dwt. A submarine pipeline runs N from this berth to the mouth of Ichi Kawa (Iti Kawa).

Higashi Ku Passage is dredged to a depth of 14m. An LNG jetty, on the inner side of E breakwater, has dredged depths of 14m alongside and in its approach.

In Section I, a dolphin berth, on the W side of the inner harbor, has depths of 12.2 to 12.5m alongside.

A channel, dredged to 12m, leads into Shikama Ku. Berths 3 to 6, on the W side of Section I, have depths of 9.5 to 10m alongside. Berths 7 through 9 have depths of 11.9m alongside.

Hirohata Passage, leading into Hirohata Ku, has dredged depths of 17.1m and is entered between No. 1 Lighted Buoy and No. 2 Lighted Buoy, moored 2 miles SSW of the head of Hirohata East Breakwater.

Raw Materials Wharf, W of the entrance to Section I, has depths of 17.1m alongside and can accommodate vessels up to 100,000 grt.

Depths of 13m lead farther N to Berth 9 and Berth 10 (Central Wharf), on the N side of Section I. There are depths of 10 to 13.5m alongside Central Wharf, which can accommodate vessels up to 76,000 dwt.

On the W side of Section I there are jetties, with depths of 4.9m alongside.

Aboshi Breakwater lies on the W side of the E entrance channel and extends from the NE corner of reclaimed land. The channel has a least depth of 7.5m in it. A light is shown on the head of the breakwater.

Sector I of Nishi Ku is for timber only. A wharf, available for vessels of 9.2m draft, lies N of East Breakwater. There are also mooring buoys for vessels of similar draft in the mouth of the river.

Aspect

The lighted mooring buoy of the offshore pipeline berth (34°43'N., 134°40'E.), previously described above, lies about 3 miles SSW of Higashi Ku harbor entrance.

East Passage, Hirohata Passage, and the dredged channel into Shikama Ku are marked by lighted buoys.

Higashi Ku.—On the E side of the inner harbor, in the vicinity of the generating station, there are two chimneys, 203m and 150m high; one is a three-stack composite chimney, painted red and white.

The three-stack composite chimney of an oil refinery lies at the N end of the inner harbor; it is 127m high, painted red and white, and is a good mark when proceeding to the inner end of Section I.

A group of oil tanks, all painted white, lies on the W side of the inner harbor.

Shikama Ku.—The three-stack composite chimney of a power station lies on the E side of the harbor interior; it is 150m high and painted red and white. Farther N, there are two towers, 99m high, painted red and white, and supporting overhead cables.

Himeji Port Office, a white six-storied building, is conspicuous at the N end of the interior of the harbor.

Hirohata Ku.—Two pairs of range lights, in line bearing 016° and 000°, respectively, lead into the harbor; the lights may be difficult to distinguish in daytime.

Two cranes, painted red, are situated on Raw Materials Wharf, W of the entrance to Section I.

Aboshi Ku.—A factory chimney, 92m high, painted red and white, lies about 0.8 mile NNW of the head of Aboshi Breakwater.

Pilotage

Pilotage is not compulsory. If required, the pilot boards in the anchorage area. Inland Sea pilotage is required for vessels over 10,000 grt; the pilot boards at Wadamisaki.

There is a signal station on the W side of the harbor entrance of Hirohata Ku. Vessels should retain onboard the most recent edition of Japan Maritime Safety Laws and Regulations, obtainable through the Japanese Coast Guard. This publication should be kept as a reference for signal station communiques and their meanings, appropriate answering signals, and other local or specific regulations.

Anchorage

Deep-draft vessels, waiting for the tide, may take temporary anchorage close SE of the entrances to the passages and the dredged channel.

Caution

With strong W winds of the winter monsoon, a vessel may be set markedly E when the ebb current is E in the vicinity of the breakwater entrance at Hirohata Ku. Caution is necessary when the bow of the vessel passes inside the breakwaters; the stern of the vessel may be set to the right, and a dangerous situation may arise as the bow of the vessel swings to the left.



Kurakake Shima Light

Ieshima Gunto

7.10 Ieshima Gunto (Iesima Syoto) ($34^{\circ}40'N.$, $134^{\circ}35'E.$), in the N part of Harima Nada, consists of four large islands and more than ten small islands and islets. There are many dangerous rocks in the area, and care is particularly necessary to avoid Kami-Shizumo and **Shimo-Shizumo** ($34^{\circ}42'N.$, $134^{\circ}30'E.$), N of the islands.

Numerous fish havens are situated between and around the islands in this group.

Harima Nada North Fairway passes N of Ieshima Gunto, but passes S of Kami Shima, the E islet. Large vessels navigating to and from Himeji Ko and Aioi Ko also go between Ieshima Gunto and Shodo Shima.

Kami Shima ($34^{\circ}41'N.$, $134^{\circ}43'E.$), the E islet of the group, lies about 4 miles SSE of the entrance to Higashi Ku (Himeji Ko). It is a round-topped islet, 44m high, and marked by a light near its summit. The islet should not be approached too closely, as drying and submerged rocks lie up to about 410m N and S of the islet. A rock, with a depth of 11.9m, lies about 0.5 mile SSW of the islet.

Kurakake Shima, about 3.5 miles W of Kami Shima, has two summits; the E summit is 64m high, and a light is shown from the W summit. A rock, 4.9m high, lies close to the SE end of the islet, and a rock, 8.8m high, with a rock awash close W, lies close to the NW end of the islet. A dangerous wreck, the charted position of which is approximate, lies almost 0.5 mile S of Kurakake Shima.

Futon Shima, nearly 1.5 miles WSW of Kurakake Shima, is 43m high; a rocky islet, 18.9m high, lies about 0.1 mile S of the SW end of the islet, to which it is connected by a drying bank.

Oikari, a rock, 1m high, with a submerged rock close E, lies about 0.4 mile SSW of the above-mentioned 18.9m islet. A lighted buoy is moored close NW of Oikari.

7.11 Tanka-jima (Tanga Shima) ($34^{\circ}40'N.$, $134^{\circ}35'E.$), about 1 mile WSW of Futon Shima, is the E of the four large islands. The island has two summits; the W summit is 220m

high and marked by a light on its S side. Many white scars mark the coast where stone has been quarried.

Koikari, a rock, which dries 0.8m, lies about 0.2 mile E of Tanka-jima. Uwa Shima, two islets close together, lies about 0.3 mile N of the N extremity of Tanka-jima; the NW islet is 33m high. Ka Shima, about 0.5 mile SE of the S extremity of Tanka-jima, consists of three islets joined by a sandy beach; the SE islet is 56m high. A reef, with a pointed rock, 3.4m high, at its outer end, extends about 0.2 mile E of the N islet.

Ie Shima, nearly 1 mile W of Tanka-jima, is the principal island of the group; the summit of the island, in its SE part, attains an elevation of 142m. A light is shown from the N end of the island.

Ieshima Ko, which is protected by breakwaters that extend from both sides of the middle of the inlet and shows a light from each breakwater head, lies in a bay on the NE side of Ie Shima. Several dangerous wrecks lie in the NE approaches to Ieshima Ko.

Anchorage, sheltered from all but NE winds, can be taken by small vessels outside the breakwaters, in depths of 18.3 to 22m.

7.12 Kami-Shizumo ($34^{\circ}42'N.$, $134^{\circ}30'E.$), a rock with a depth of 1.4m, lies about 1.3 miles NNW of the NW extremity of Ie Shima. Shimo-Shizumo, a rock with a depth of 4.6m, lies close WSW of Kami-Shizumo. A lighted buoy is moored NE of Kami-Shizumo, and another lighted buoy is moored SW of Shimo-Shizumo.

Nishi Shima (Nisi Shima), about 1 mile WSW of Ie Shima, has many white cliffs on its coasts. Its summit, 276m high, lies in the SW part of the island; a pyramidal rock is conspicuous about 0.4 mile N of the summit.

Boze Shima (Bose Shima), 104m high in its W part, is connected to the SE extremity of Nishi Shima by a drying bank. A light is shown from the shoals close off the E side of Boze Shima. There is a small harbor, protected by a breakwater, on the E side of the island.

Yano Shima, 38m high, lies midway between the N end of Boze Shima and the SW end of Ie Shima. A drying rock lies

close E of Yano Shima, and a dangerous rock lies midway between Yano Shima and the S end of Ie Shima. A drying reef, with a 11.9m high rock and a submerged rock near its outer end, extends about 0.3 mile SW of Yano Shima.

Kuro Shima, 80m high, and another islet lie about 0.8 mile and 1.3 miles, respectively, S of Yano Shima. A rock, with a depth of 6.9m, lies midway between Kuro Shima and the S part of Boze Shima.

Taka Shima, 107m high, lies nearly 0.5 mile S of the SE extremity of Nishi Shima, with foul water between. **Taka Shima** (34°38'N., 134°32'E.) 31m high, is a small islet of the same name as the island 1.5 miles W of it.

Anchorage.—Anchorage can be taken, in 16 to 20m, between the E coast of Nishi Shima and the NW coast of Boze Shima. Care must be taken to avoid Uchi-Shizumo, a rock, with a depth of 1.4m, about 0.5 mile W of the N extremity of Boze Shima. Care is also necessary due to fish cultivation facilities between Uchi-Shizumo and the E coast of Nishi Shima, and in the inner parts of the anchorage.

Temporary anchorage can be taken, in 14.9 to 19.8m, in the bays on the N and S sides of Nishi Shima with local knowledge. A rock, with a depth of 7.2m, lies on the E side of the entrance to the S bay.



Inge-jima Light

7.13 Inge-jima (Inge Shima) (34°39'N., 134°26'E.), about 1 mile W of Nishi Shima, has its 76m high summit near its SW end. A light is shown near the middle of the island. A chain of islets and rocks extends about 1.7 miles SSW of Inge-jima to Komatsu Shima, 32m high, with bushes on it.

Matsu Shima, 88m high to the tops of the trees, lies about 2.5 miles SSE of the SW extremity of Nishi Shima. Odonon Se, a rock with a depth of 1.2m, lies about 0.4 mile ENE of Matsu Shima; Dekisono Se, a rock, with a depth of 1.2m, lies about 0.4 mile WSW of Matsu Shima.

Mitsugashira Shima, 46m high, lies about 0.8 mile W of the SW end of Matsu Shima. A chain of islets, rocks, and dangers

extends about 1 mile NNE of Mitsugashira Shima to Katsura Shima, 40m high. It is not advisable to pass between the islets.

Himeji Ko to Ako Ko

7.14 Noboriwa Yama (34°46'N., 134°33'E.), 145m high, sparsely covered with pine trees, and with a large rock on its summit, is conspicuous about 1.5 miles NW of the head of the W breakwater at Nishi Ku of Himeji Ko.

Murotsu Wan, about 2.5 miles farther W, is free of dangerous rocks and provides anchorage for vessels up to 500 grt, sheltered from winds other than from the SW.

Murotsu Gyoko, protected by a breakwater, lies within 1.5 miles S of the entrance to Murotsu Wan. A light is shown on the head of the breakwater. A fish haven exists 0.2 mile S of the light.

Kanega Saki (34°45'N., 134°29'E.) separates Murotsu Wan from Aioi Ko, close W. Kimi Shima, 31m high to the tops of the trees, lies about 0.2 mile S of Kanega Saki.

Okino-Karani Shima, about 1.3 miles SE of Kanega Saki, is thickly covered with pines, and 38m high to the tops of the trees. Depths of less than 4.9m extend about 0.1 mile S of the islet, and an islet close NE is joined to it by a reef.

Jino-Karani Shima, about 0.5 mile NE of Okino-Karani Shima, is 40m high to the tops of the trees. Two rocks, one drying 0.8m and the other with a depth of 0.4m, lie about 0.2 mile NE and ENE, respectively, of Jino-Karani Shima.

Aioi Ko (34°46'N., 134°28'E.)

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7.15 Aioi Ko is entered between Kanega Saki and Kama Saki, about 1 mile W. Kazura Shima, marked by a light, lies about 0.5 mile WSW of Kimi Shima, in the middle of the entrance to Aioi Ko. It was reported that shoaling had occurred in an area 0.6 mile N of Kanega Saki; depths of 4m had been recorded. The entire W side of the harbor is occupied by a shipbuilding yard, with a number of berths, drydocks, and facilities for building vessels up to 477,000 dwt. The city of Aioi lies at the head of the harbor.

Winds—Weather.—Mountains border three sides of the harbor. The interior of the harbor is calm, even in the W to WNW storms of winter.

Tides—Currents.—The tidal rise is 1.5m at springs, and 1.3m at neaps.

Depths—Limitations.—The harbor has general depths of 6 to 7.9m.

The private wharves of the shipbuilding yard occupying the entire W side of the harbor, and have depths of 6 to 7m alongside.

The largest drydock on the W side of the harbor is 340m long, 56m wide, with a depth of 8m, and has a 150,000 dwt capacity.

Kasamatu Iwa, a rock, 3m high, lies close off the E shore, about 0.8 mile NNW of Kanega Saki. Kabe Shima, a rock, 2.1m high, lies about 0.2 mile offshore, about 0.8 mile farther N; a depth of 4.5m lies about 150m S of Kabe Shima.

Aspect.—A three-storied building on the summit of a hill on the E side of the harbor entrance is conspicuous from a distance.

Lights, in line bearing 350.5°, lead into the harbor; the lights are shown from hills behind the shipyard at the head of the harbor. A white radio tower stands on the summit of a 181m hill, about 0.3 mile W of the range lights.

Pilotage.—[For information, see paragraph 6.1.](#)

7.16 Sakoshi Wan (34°45'N., 134°27'E.) lies close W of Aioi Ko and is open S. Sakoshi Ko, a local port, lies in the NW part of the bay and is sheltered E by Iki Shima, densely wooded and 60m high to the tops of the trees. A second harbor, protected by a breakwater, has a quay and jetty and lies 0.4 mile NE of Iki Shima. Fish havens lie within 0.3 mile SW of Kama Shima. Nabe Shima, 29m high and sparsely covered with pine trees, lies in the NE part of the bay. A light is shown from the head of a breakwater extending from the E side of the island.

Anchorage.—The bay has depths of 4.9 to 5.8m, mud, and anchorage can be taken as convenient. Sakoshi Ko has depths of 4 to 5m and is a safe roadstead for small vessels.

Mi Saki (34°44'N., 134°25'E.), 68m high, lies about 3 miles WSW of Kazura Shima. A light is shown from, and a shrine is situated on, the summit of the headland. There are many hotels in the area; their lights are visible from a distance. A rock, 0.9m high and marked by a light, lies about 0.2 mile S of the headland.

Toriage Shima, 17.1m high, and sparsely covered with pine trees, lies about 1.3 miles WSW of Mi Saki. It lies close off the mouth of Chigusa Kawa; extensive salt pans lie E of the river mouth.

Ako Ko

7.17 Ako Ko (34°44'N., 134°22'E.) lies in the mouth of Otsu Kawa, about 1.5 miles NNW of Toriage Shima. The harbor limit extends from Toriage Shima to Tuna Saki, at the W entrance to Otsu Kawa. A dredged channel and range lights lead into the harbor, which is being developed into an industrial harbor.

Depths—Limitations.—The entrance channel (34°43'N., 134°22'E.) is about 500m wide and dredged to 7.3 to 7.9m.

The cement wharf, in the vicinity of the front range light, has depths of 4.5 to 8.2m alongside. A dolphin berth, close SE of the cement wharf, has a depth of 7.5m alongside.

Aspect.—Range lights, in line bearing 000°, lead into the harbor through the dredged channel, which is marked by lighted buoys.

A chimney, 100m high, lies on the E side of the mouth of Otsu Kawa, between the range lights; the range lights may be difficult to see. Two chimneys, each 78m high, are conspicuous about 0.3 mile farther N.

A cliff on the S side of the 145m hill, about 1 mile W of Tuna Saki, is a good landmark for distinguishing the harbor from a distance.

Caution.—There are fixed fishing nets and seaweed cultivation grounds on both sides of the entrance channel from September to April.

Ako Ko to Ushimado Ko

7.18 Kakui Shima, about 2 miles SW of Ako Ko, has a conspicuous rounded summit (34°43'N., 134°19'E.), 219m high, and is marked by a light at its SE end. Several fish havens exist in the bight on the S side of the island. Tsura Shima, 37m high and treeless, lies about 1 mile S of the summit of Kakui Shima; a rock, 12.8m high, lies off its S end. Otabu Shima, 41m high, lies about 1 mile SW of Tsura Shima. There is a small harbor, protected by a detached breakwater, on the N side of the island. A light is shown from the W head of the breakwater. Kashiri Shima, 58m high, lies about 0.5 mile NNW of Otabu Shima.

Anchorage can be taken by small vessels, in 6 to 7m, mud, S of Kakui Shima, between the above-mentioned islands. Care must be taken to avoid Komeishi, a group of rocks, one of which dries 2m, lying about 300m E of Kashira Shima. Care is needed to avoid several submarine cables and pipelines laid between these islands.

Naga Shima, about 0.8 mile W of Otabu Shima, has many summits about 100m high, and is covered with pine trees; a low isthmus is in its center. It is almost joined to the mainland W by a channel, which is crossed by a bridge with a vertical clearance of 13m. Ohira Yama, 262m high, is conspicuous about 2.8 miles WNW of the E extremity of Naga Shima. Tamakazura Yama, about 1.8 miles farther WSW, is a sharp wooded peak, 267m high.

The approach to the small local harbors of Katagami Ko and Hinase Ko lies between Otabu Shima and Naga Shima. The many narrow channels between the above-described islands and the mainland are available to small vessels with local knowledge.

7.19 Ki Shima (34°40'N., 134°13'E.), 24m high, is located about 0.5 mile SW of Naga Shima. Takatsubo Yama, about 1.5 miles farther WSW, is 143m high and surmounted by a pine woods conspicuous from a distance.

Kinkai Wan is entered S of Takatsubo Yama; the major part of the bay is being reclaimed.

Bangaishi Hana, the S entrance point of Kinkai Wan, is located about 1.3 miles S of Takatsubo Yama. Kami Ikada, a rock, 3.6m high and marked by a light, lies nearly 1 mile E of Bangaishi Hana; a rock, which dries 0.5m, lies about 0.1 mile NE of Kami Ikada. Nezu Shima, an islet, 35m high, is conspicuous about 0.3 mile WNW of Kami Ikada. Shimo Ikada, a rock, 3.1m high, lies about 0.6 mile SW of Kami Ikada; a rock, with a depth of 0.3m, lies close NW of Shimo Ikada.

Mae Shima (34°36'N., 134°11'E.) lies with its E extremity about 1.3 miles S of Kami Ikada; the summit of the island, in its E part, is 137m high and thickly covered with pine trees. A light is shown on the N extremity of the W end of Mae Shima.

Ao Shima, 31m high and treeless, lies about 0.4 mile SE of the E end of Mae Shima. Ki Shima, about 0.5 mile SW of Ao Shima, has two summits with pine trees; the W summit is 67m high. A light is shown from the SE extremity of the island. Two rocks, which dry 1.5 and 1.1m high, lie about midway between Mae Shima, Ao Shima and Ki Shima.

Kuro Shima (34°36'N., 134°10'E.), 33m high, with pine trees near its summit, lies close SW of Mae Shima, in the S approach to Ushimado Ko. It is the E of three islets lying on a

drying bank. The group lies on a mud bank, with depths of less than 4.9m, extending about 0.5 mile W of the W islet. A channel, about 0.3 mile wide lies between the W edge of the bank and Yomogi Saki, the SW entrance point of Ushimado Ko. A light is shown from Yomogi Saki.

7.20 Ushimado Ko (Ushimado Ko) (34°37'N., 134°10'E.), a small local port, is divided into an E area and a W area by Ushimado Seto, a narrow passage between the NW end of Mae Shima and the mainland. The passage is about 0.1 mile wide, and is not only restricted by rocks, with depths of less than 4.9m, extending from both sides, but there are tidal currents of over 2 knots. An overhead cable, with a vertical clearance of about 30m, crosses the narrows. A light is shown from the N extremity of the W end of Mae Shima; the E limit of the harbor extends N from this extremity.

There is a least depth of 5.2m in the S approach to the anchorage, between mud banks, with depths of less than 2m and with a dense growth of seaweed, extending from the N and S sides of the W harbor area.

The E approach to Ushimado Ko, N of Mae Shima, has depths of less than 4.9m.

Anchorage, with local knowledge, can be taken, in 14.6 to 15.9m, with the W end of Mae Shima bearing 164°, distant about 0.4 mile.

Shodo Shima

7.21 Shodo Shima (Syodo Shima) (34°30'N., 134°16'E.), on the W side of Harima Nada, rises to an elevation of 817m at Hoshigajo Yama (Hosigazyo), in the E part of the island. A 777m peak is located about 1.5 miles W of Hoshigajo Yama; a wooded ridge extends from this peak to Jizo Saki (Zizo Saki), the S extremity of the island. **Taima Zan** (34°29'N., 134°14'E.), a steep cliffy plateau, 427m high, in the W part of the island, slopes S to Ikada Wan.

Okado Hana, the SE extremity of Shodo Shima, and the off-lying dangers off the E side of the island were [previously described in paragraph 7.2](#).

Fukuda Wan (34°33'N., 134°22'E.), at the NE end of Shodo Shima, is sheltered from all but E winds. The bay is entered between Kanega Saki (Kanaga Saki), 105m high and Ko-jima, about 1 mile S. The latter islet is 44m high, and joined to the mainland at its W end. O Iso, a rock, marked by a light, lies about 1 mile ESE of Kanega Saki. Hinde Iwa, which dries 0.6m, lies about 0.7 mile E of Ko-jima and is marked SE by a lighted buoy. Manaita Iwa, a rock, with a depth of 2m, lies about 0.4 mile NE of Hinde Iwa. The fishing port of Fukuda lies at the head of the bay.

Anchorage.—Anchorage can be taken by vessels with local knowledge in Fukuda Wan. The major part of the bay has depths of 14.6 to 29.2m. There are seaweed cultivation grounds within 410m of the shore on the N side of the bay from October to April, and fish cultivation grounds within 400m of the S shore from April to January.

7.22 Obe Wan, an open bight on the N coast of Shodo Shima, lies between **Myoken Saki** (34°33'N., 134°16'E.), a steep-to wooded point, 103m high, and a point about 2 miles E. Obe Ko, a local port, lies at the head of Obe Wan.

O Shima, 29m high, lies about 0.8 mile ENE of Myoken Saki, and is the outermost of a group of rocks connected by shoals. A rock, with a depth of 1.7m, and marked close NE by a lighted buoy, lies about 0.5 mile E of O Shima, with above and below-water rocks in between. Ko Shima, 35m high, lies about 0.8 mile ESE of O Shima, and about 0.2 mile offshore.

Anchorage.—Temporary anchorage can be taken, in 5 to 7m, midway between O Shima and Ko Shima, by small vessels with local knowledge.

Kabura Saki, at the W end of the N coast of Shodo Shima, is 22.2m high to the tops of the trees. A reef, with depths of less than 10.1m, extends about 685m N from a position about 0.2 mile E of the point; a rock, with a depth of 2.4m, lies in the N part of the reef. Chiburi Shima, 32m high and marked by a light at its NE end, lies about 0.5 mile W of Kabura Saki; rocks lie within 0.1 mile N of the NE extremity, and within 0.2 mile off the SW side of Chiburi Shima. Kazura Shima, 59m high, lies about 0.5 mile SW of Chiburi Shima.

Caution.—It is inadvisable to go between Chiburi Shima, Kazura Shima, and Shodo Shima.

7.23 Sakate Ko (34°27'N., 134°19'E.) is located at the NE end of Sakate Wan, which is entered between Okado Hana, the SE end of Shodo Shima, and Shioya Hana (Sioya Hana), about 2.8 miles WNW. Ko Shima, 49m high and surmounted by a beacon, lies about 1 mile NW of Okado Hana, and is separated from the E shore by a shallow channel.

The harbor is open SSE to WSW; with strong SE winds, heavy seas enter the harbor.

A wharf, marked by a light at its outer end, lies in the N part of the inner end of the harbor; it is 115m long, with depths of 4 to 6.4m alongside its N side.

A jetty, close NW of the wharf, has depths of 5.5 to 10.1m alongside.

Anchorage can be taken in Sakate Ko, in 14.6 to 24m, except in strong SE winds.

Uchinoumi Wan (Uti-no-Umi), entered W of Shioya Hana, is separated from Sakate Wan by a hilly peninsula. The bay provides good anchorage for all types of vessels during typhoons. Uchinoumi Ko lies at the inner end of the bay.

Gongen Hana, the E entrance point of the bay, lies nearly 0.5 mile NW of Shioya Hana. Okino Hanage, a rock drying 0.6m, and marked NW by a lighted buoy, lies on a shoal about 0.3 mile SW of Gongen Hana. Jino Hanage, a rock awash, marked NW by a lighted buoy, and with shoal water extending about 230m N and S of it, lies about 0.3 mile NNW of Gongen Hana.

Anchorage can be taken as convenient in Uchinoumi Wan, in depths of 11.9m, mud, by all types of vessels.

Ouchinoumi Ko (Utinomi Ko) (34°28'N., 134°19'E.) is a local port, sheltered from all winds, and known as a port of shelter for large and small vessels.

Benten Shima, 8.9m high and wooded, lies at the inner end of the harbor; a wooded islet, 5.6m high, lies about 0.1 mile W of Banten Shima, to which it is connected by a drying reef.

A wharf about 0.3 mile SE of Banten Shima is 71m long, and can accommodate a 1,000 grt vessel in a depth of about 4.9m.

7.24 Ikeda Wan (34°28'N., 134°13'E.) lies on the SW side of Shodo Shima; it is entered between Jizo Saki, the S ex-

tremity of Shodo Shima, and Kuro Saki, the S extremity of Ka Shima, about 5 miles NW. Chojaga Hana, about 1.5 miles N of Jizo Saki, is the N entrance point of a small cove in the SE part of the bay. Benten Shima, an islet, 21m high and sparsely wooded, lies about 1.8 miles farther N. Ikeda Ko, a small port, is entered close N of Benten Shima.

Yo Shima, 51m high, and wooded, lies in the NW part of Ikeda Wan, and is connected by islets and drying banks to the coast N.

Fujino Se, with a least depth of 6.1m, lies about 0.5 mile W of Chojaga Hana. Okino Mo, with a least depth of 3.7m, mud or sand and shell, and with a luxuriant growth of seaweed, extends about 0.8 mile E from a position about 0.3 mile S of Yo Shima. Sandwaves lie in the middle of the entrance to the bay.

Tonosho Higashi Ko, on the E side of Ka Shima, has a pier 180m long, with depths of 3.1 to 6m alongside. A channel, about 90m wide, with depths of 5 to 6.5m, leads to the pier. The approach channel is marked on its W side by lighted buoys (port hand) and by lighted spar buoys (red and yellow).

Anchorage.—Ikeda Wan provides good sheltered anchorage except in S winds. Large vessels can anchor, in 11 to 13m, on a line between Kuro Saki and Chojaga Hana, or in 9.2 to 14m, NW of Chojaga Hana, remaining clear of Fujino Se. Small vessels can anchor, in 5.5 to 7m, mud, in the inner part of the bay, clear of Okino Mo.

Tonosho Ko (34°30'N., 134°10'E.), a local port, on the W side of Shodo Shima, is available to small vessels with local knowledge through a narrow shoal channel between Ka Shima and Shodo Shima.

Bisan Seto

7.25 Bisan Seto extends from the SW part of Harima Nada to Bingo Nada, a distance of about 36 miles. The E entrance lies between **Jizo Saki** (34°25'N., 134°14'E.) and O-gushi Saki, about 3 miles SSW. The W entrance lies between Mu Shima and Mi Saki, nearly 2.5 miles SE.

Traffic Routes prescribed by the Maritime Traffic Safety Law are in force in Bisan Seto, as follows:

1. Bisan Seto East Traffic Route—Located in the E part of Bisan Seto. This traffic route is crossed by Uko East Traffic Route and Uko West Traffic Route
2. Bisan Seto North Traffic Route—For westbound vessels in the W part of Bisan Seto
3. Bisan Seto South Traffic Route—For eastbound vessels in the W part of Bisan Seto
4. Mizushima Traffic Route—Near the E end of Bisan Seto North Traffic Route

Vessels 50m long and over are required to remain within the limits of the Traffic Routes, the limits of which are best seen on the chart, and which are delineated by lettered lines, also best seen on the chart, as follows:

1. Mizushima Traffic Route.
 - a. Between Line A and Line B.
 - b. Between Line B and the harbor limit.
2. Bisan Seto Traffic Routes.
 - a. Between Line G and Line F.
 - b. Between Line F and Line E.
 - c. Between Line E and Line D.
 - d. Between Line D and Line C.

Depths—Limitations.—Bisan Seto East Traffic Route has a least depth of 14.9m at Taka Se, about 2 miles WSW of Jizo Saki; there are several places with depths of 18.3 to 18.9m, but otherwise the depths are over 20m.

Bisan Seto North Traffic Route has depths of over 17.1m, except for a rock, with a depth of 9.2m, which lies about 0.2 mile ENE of **Habushi Iwa** (34°20'N., 133°43'E.); the bottom in several places is rock, with depths of 17.1 to 18.9m.

Bisan Seto South Traffic Route has depths of 11.9 to 12.8m in its central part, and a least depth of 11.2m, about 0.3 mile SE of Takami Shima.

Vessels shall not navigate at speeds exceeding 12 knots in certain areas indicated on the charts, except when a vessel is crossing the traffic route.

There are certain areas indicated on the chart where vessels are prohibited from crossing the traffic route.

See Pub. 120, Sailing Directions (Planning Guide) Pacific Ocean and Southeast Asia for regulations of the Maritime Traffic Safety Law.

There is a least depth of 14.9m in Mizushima Traffic Route, except for in the area W of **Mitsugo Sashi** (34°22'N., 133°49'E.), where there is a least depth of 13.4m. Sandwaves with depths of less than 10.1m have been reported in the most difficult part of Bisan Seto where the traffic routes intersect.

Pilotage.—Pilotage is compulsory in the above traffic routes for:

1. Vessels over 10,000 grt.
2. Foreign vessels carrying dangerous cargo as specified by the Maritime Traffic Safety Law.
3. All foreign vessels whose master is making their first voyage through the Naikai.

[See paragraph 6.1 for further information.](#)

Bisan Seto East Traffic Route

7.26 Bisan Seto East Traffic Route extends between **Jizo Saki** (34°25'N., 134°14'E.) and **Ko-Sei Shima** (34°22'N., 133°51'E.), N of Sakaide Ko. The traffic route is narrow and winding, with many fishing vessels, cross traffic of ferries, and heavy traffic. Vessels should not cross in the vicinity of the entrance and departure points of the traffic route. Vessels leaving the traffic route should not alter course in the vicinity of these points.

Lighted buoys mark the traffic route.

7.27 Aspect—North side.—Shodo Shima and **Jizo Saki** (32°25'N., 134°14'E.) have been [previously described in paragraph 7.21](#).

Taka Se, with a least depth of 14.9m, lies about 2 miles WSW of Jizo Saki, and is the least depth of Bisan Seto East Traffic Route.

Ka Shima, separated from Shodo Shima by a barely drying channel, lies about 4.5 miles NW of Jizo Saki. Ofuka Yama, 227m high, with few trees, is the summit of the island lying near its center.

Yoko Se, with a least depth of 17.1m, lies about 1.3 miles SSE of Kuro Saki, the S extremity of Ka Shima.

Te Shima, about 2 miles W of Ka Shima, rises to a plateau in its central part, from which rises Dan Yama, 340m high, the

summit of the island. Uomi Yama, a sharp peak, 103m high, lies in the W part of the island.

Ode Shima, an islet, 133m high, lies between Ka Shima and Te Shima. It lies close on the E side of Te Shima and is separated from it by a narrow channel. Two overhead cables, with a least vertical clearance of 42m, span the channel. Fish havens are situated at the N and S ends of this channel. Awara Shima, a conical rocky islet, 31m high, lies about 0.5 mile S of Ode Shima.

A sandbank, with a least depth of 11.9m, lies close N of the traffic route, and extends from about 0.5 mile SSE of Kuro Saki to about 1 mile SE of Reita Saki, the S extremity of Te Shima.

Nao Shima, about 2 miles WSW of Te Shima, rises to a 124m summit in its central part. Two chimneys, 236m and 98m high, of the refinery in the N part of the island, are conspicuous. Kashiwa Shima (Kashiwa Shima) lies close SE of Nao Shima; passage between the islands should be avoided due to a shoal, with a least depth of 3.8m, in the channel. Two large steel pylons, each painted red and white, for the overhead cables, with a vertical clearance of about 58m, running between Kojin Shima (Kozin Shima), on the W side of Nao Shima, to Inumodori Hana, about 1 mile farther W, are conspicuous.

Ozuchi Shima (O-Zuti Shima) (34°25'N., 133°55'E.), a conical island, 171m high, is conspicuous about 4 miles WSW of Kashiwa Shima. Three chimneys, 196m, 172m, and 156m high, are also conspicuous at Hibi, about 2 miles N of Ozuchi Shima.

Osono Se lies on a shoal area with depths of less than 20m, which extends from the W side of Kashiwa Shima to about 1.5 miles W of Ozuchi Shima. Osono Se lies between Uko East Traffic Route and Uko West Traffic Route. There are sandwaves on Osono Se, and lighted buoys mark the shoal.

O-yo Shima (Koyo Shima), about 48m high, lies nearly 5 miles WSW of Ozuchi Shima. Kanadeno Asari, a rock, with a depth of 19.4m, lies about 1.3 miles E of the S end of O-yo Shima, near the center of the traffic route. A depth of 18.3m lies about 1.3 miles farther ENE, near the center of the traffic route.

Between Ozuchi Shima and O-yo Shima there is an almost continual bank, with depths of less than 20m, and a least depth of 11.2m.

7.28 Aspect—South side.—Goken San (34°21'N., 134°09'E.), [previously described in paragraph 7.2](#) with Harima Nada, has a conspicuous rocky summit, is the highest in the vicinity, and is conspicuous on the W side of Shido Wan. Ryuo San, 239m high, and Tomi Yama, 236m high, with a sharp peak, lie about 1.3 miles NNE and 1.5 miles N, respectively, of Goken San, near the N end of the peninsula. Taka Shima, 78m high to the tops of the trees, lies about 0.8 mile NE of the NE end of the peninsula; it is bordered by shoals. Yakuri Dashi, a bank with a least depth of 14.9m, lies about 1 mile NW of Taka Shima.

Inagi Shima, about 2 miles WNW of Taka Shima, is 58m high to the tops of the trees, with a round summit on its E end; a light is shown from the SE end of the island. From the E or W, the island appears saddle-shaped.

Okabuto Shima, about 0.5 mile farther NW, is round-topped and 77m high to the tops of the trees; an 11m high rock lies close N.

Kanawa Iwa, about 0.15 mile NE of Okabuto Shima, consists of rocks drying 1.5m. A light is shown from the W drying rock.

Kokabuto Shima, an islet, 42m high, lies about 0.2 mile S of Okabuto Shima. O Shima, about 1 mile SW of Okabuto Shima, has a low sandy isthmus in its central part.

There are many shoals between Inagi Shima and O Shima.

Yoko Se, with a least depth of 12.8m nearly 1 mile NW of Okabuto Shima, lies on the S side of the traffic route, with depths of less than 20m. There are sandwaves in the vicinity.

Ya Shima, about 1 mile S of O Shima, is a roof-shaped peninsula, separated from the mainland S by a drying canal. The summit of the island is plateau-shaped, with a luxuriant growth of pine trees; a temple is on the 293m high summit and the lights of the restaurant close W of it are conspicuous from W to N.

Aji Ko, a small shallow harbor protected by two breakwaters, one of which is detached, is situated in the NE corner of Ya Shima Wan.

Another detached breakwater lies parallel to and 0.3 mile offshore SW of Aji Ko. A light is shown from its N head.

7.29 Ogi Shima (34°25'N., 134°04'E.) lies about 2 miles WNW of O Shima, on the S side of Bisan Seto East Traffic Route. The island has two summits. The N summit is 213m high and flat-topped, while the S summit is sharp pointed and lower. A light is shown from the N extremity of the island. A small harbor, protected by a detached breakwater, is situated on the SE side of the island. A bank, with depths of less than 20m, extends between Ogi Shima and Okabuto Shima. Doro Se, with a least depth of 4.6m, extends about 0.7 mile E of Ogi Shima.

Naka Se, a sandbank, with a least depth of 0.6m, extends about 3 miles WSW from Ogi Shima, and is marked by a lighted buoy at its W end. A dangerous wreck lies close SE in position 34°23'51"N, 133°59'58"E.

Ko-Zuchi Shima (Ko-Zuti Shima), about 7 miles WSW of Ogi Shima, lies on the S side of the fairway, and is conical, wooded, steep-to, and 112m high. A light is shown from the N end of the island. Atsusa Iwa, about 0.5 mile E of Kozuchi Shima, has a least depth of 3.4m.

Osakino Hana lies close SE of Ko-Zuchi Shima. Kama Se, a long, narrow bank, with a least depth of 0.8m, lies between Osakino Hana and the S extremity of Megi Shima, about 5.5 miles ESE. Three lighted buoys, in the E half of the shoal, mark Takamatsu West Fairway. There are several sandwaves.

No Zaki (No Misaki), about 1.5 miles WSW of Kozuchi Shima, is a high headland, backed by several flat-topped hills, the N of which is 172m high and rather pointed. On the W side of the point there are the remains of conspicuous landslides in three places.

Kosei Shima, about 3.5 miles WSW of No Zaki, is a pine-covered islet, 41m high.

Regulations.—Vessels navigating in Bisan Seto East Traffic Route should keep to the right side of the center of the route.

Vessels navigating in Uko East Traffic Route must navigate in a N direction.

Vessels navigating in Uko West Traffic Route must navigate in a S direction.

Vessels navigating in Uko East Traffic Route and Uko West Traffic Route shall keep out of the way of a huge vessel (vessel of 200m or more in length), which is navigating in Bisan Seto East Traffic Route.

Vessels, other than a huge vessel, shall keep out of the way of a huge vessel which intends to turn into Uko East Traffic Route from Bisan Seto East Traffic Route or which intends to turn into Bisan Seto Traffic Route from Uko West Traffic Route.

A speed limit of 12 knots is in effect for vessels navigating in that part of Bisan Seto East Traffic Route located E of Usi-jima (34°22'N., 133°47'E.).

See paragraph 7.20 for further vessel limitations in Bisan Seto East Traffic Route.

Caution.—Many small vessels keep close to the islands and headlands in the vicinity of Okado Hana, Jizo Saki and Ogi Shima. Ferries run between Uno and Takamatsu at a rate of about 1 every 10 minutes.

At night, caution is necessary to avoid confusing the lights of other vessels and navigational aids.

A large number of fishing vessels congregate between Jizo Saki and Ogi Shima, and may completely block the fairway; in addition, care is necessary as many of them do not show lights at night. There are boats operating with nets principally in the vicinity of Bisan Seto East Fairway Lighted Buoy 5 and Bisan Seto East Fairway Lighted Buoy 6.

Between Ogi Shima and Ko-Zuchi Shima, there are many vessels operating using nets and making use of the tidal current; they congregate principally S of Osono Se. Some of the vessels are reported to show no lights or to show lights suddenly when approached by other vessels.

Between Ko-Zuchi Shima and Kosei Shima there are many vessels operating using nets in the vicinity of Bisan Seto East Fairway Lighted Buoy No. 1.

Suspension bridges cross the W part of Bisan Seto East Traffic Route and the E part of Bisan Seto South Traffic Route; both spans have a vertical clearance of 65m.

Bisan Seto (East Part)—Honshu Coast

7.30 Ushimado Ko (34°37'N., 134°10'E.) was previously described in paragraph 7.20.

Inushima Shoto (34°34'N., 134°06'E.), a group of islands, lies about 4 miles SW of Ushimado Ko.

Inu Shima, the central and largest island, has many trees in its W half, and six conspicuous brick chimneys in its E half. A treeless islet, 25.9m high, lies close E of Inu Shima. Two islets, the highest 22.9m high to the treetops, lie off the SW end of Inu Shima. Shira Ishi, at the E end of the group, is a group of white rocks, 2.1m high and marked by a light. A shoal, with depths of less than 4.9m and a least depth of 3.8m, extends about 0.4 mile E of Shira Ishi.

Inno Shima, close NW of Inu Shima, is 39m high, with six conspicuous white chimneys. Nishino Sowai, a steep-to rock, with a depth of 2.8m, lies about 0.4 mile W of Inno Shima. Rocks, drying and awash, lie up to 0.1 mile off the N side of Inushima Shoto.

Naga Su, a narrow sandbank, with a least depth of 7.3m, extends about 2.8 miles WSW from the W end of Inushima Shoto.

Okayama Suido

7.31 Okayama Suido, about 2 miles WNW of Inushima Shoto, is entered between **Kome Saki** (34°34'N., 134°03'E.)

and Kiriishi Hana, about 0.8 mile NE. Kome Saki is 63m high and marked by a light; Hachijo-Iwa Yama, 281m high, is about 1.3 miles W of the point and is the E summit of the mountains in the vicinity. Kiriishi Hana is 89m high, with a large cliff formed by stone quarrying.

Caution.—An overhead power cable, with a vertical clearance of 42m, spans Okayama Suido W of Kiriishi Hana. A mud bank, with depths of less than 4.9m, extends nearly 0.8 mile from the W side of the entrance of Okayama Suido.

Okayama Suido extends NW and W for about 5 miles to Okayama Ko at its head, and has a navigable width of less than 0.2 mile in places. Yashii Kawa enters the N side of Okayama Suido, about 2 miles within the entrance, and Asahi Kawa enters Okayama Suido at Okayama Ko. Koshima Wan, close SW of Okayama Ko, has been formed into a fresh water lake by a dike.

Okayama Suido Lighted Buoy No. 1 is moored about 0.8 mile ESE of Kome Saki, on the W side of the entrance channel. The channel is narrow, with depths of less than 4.9m on either side, and local knowledge is necessary. The N part of Okayama Suido, between Yashi Kawa and Asahi Kawa, is shoal and the channel lies on the S side, and is marked by buoys.

7.32 Okayama Ko (34°36'N., 133°59'E.) ([World Port Index No. 61575](#)) is an important harbor. A wharf, on the E side of the mouth of Asahi Kawa, has depths of 3.5 to 4m alongside. A berth, 103m long, on the E side of the shipping pool, can accommodate a 3,000 grt vessel, in a depth of 5.5m.

De Saki (34°31'N., 134°00'E.), about 4.5 miles SSW of Kome Saki, is the S extremity of a flat-topped peninsula; two radio towers and a beacon are on the point. An islet, 20m high, lies about 0.2 mile E of the point.

Ohiru Shima, 27m high and marked by a light at the W end, lies about 0.5 mile E of De Saki; a pointed rock, 11.9m high, lies close N of Ohiru Shima.

I Shima, about 0.3 mile S of Ohiru Shima, is marked by a light at its S end. Dango Yama, 157m high, lies in the middle of the island.

Te Shima, nearly 1 mile E of I Shima, has a conspicuous peak, Abu Yama, 200m high at its N end; a cliff formed by quarrying lies on the E side of the peak.

Dango Se, with depths of less than 10.1m and a least depth of 1.3m in its W part, lies N of Te Shima and extends about 4 miles ENE from a position about 1 mile E of the N extremity of I Shima; lighted buoys mark its E and W ends.

Chiburi Shima (34°32'N., 134°10'E.), off the NW extremity of Shodo Shima, was previously described in paragraph 7.22 with that island.

Desaki Uchi, entered W of De Saki, is obstructed by islets and shoals, and has irregular depths; it should not be entered without local knowledge. An area on the W side is being reclaimed and a quay is being constructed.

7.33 Kyonojoro Shima (34°29'N., 133°59'E.), about 1.5 miles SW of De Saki, is 84m high; both sides of the summit have been conspicuously cut away by quarrying and show a light brown color. A light is shown from the SE end of the island. A depth of 10.1m lies about 0.8 mile E of the island.

Tsubune Shima, 76m high, lies about 0.5 mile SE of Kyonojoro Shima.

Directions.—The route from Ushimada Ko to Uno Ko, in addition to being the route for large vessels in and out of Uno Ko, is the route normally used by small vessels. In general, vessels proceed between I Shima and Ohura Shima, between Kyonojoro Shima and Tsubone Shima, between Nao Shima and Kazura Shima, and head for Shimotsui Seto.

Ishima Suido (Isima Suido), a deep-water channel, lies between I Shima and Te Shima. Harima Nada North Lighted Buoy No. 2 (34°31'N., 134°02'E.) is moored at the N entrance, and Harima Nada North Lighted Buoy No. 1 (34°28'N., 134°02'E.) is moored at the S entrance. Uomi Yama, 103m high, with a sharp peak, is conspicuous near the W end of Te Shima. Rocks, with depths of less than 10.1m, and with a rock drying 1.2m, extend about 410m NW from Ko Saki, the NW extremity of Te Shima. An extensive shoal area, with depths of less than 10.1m, lies on SW side of Te Shima, and with its SW extremity about 1.5 miles S of the W extremity of the island; the part parallel with the coast of Te Shima, from which it is separated by a narrow channel, has depths of less than 4.9m and a least depth of 3.9m.

Kurakake Hana, the S extremity of I Shima, is conical-shaped, conspicuous from the NE, and has many cliffs in the area caused by quarrying; a light is shown from the point. Care is necessary to avoid Dango Se in the N approach to the channel. Two submarine power cables, marked by beacons on the shore, cross the fairway close to the N of Karakake Hana.

Uno Ko (34°29'N., 133°57'E.)

World Port Index No. 61580

7.34 Uno Ko is a specified port lying on the W side of Katsurashima Suido. The city of Tamano, backing the harbor, is the center for traffic linking Honshu and Shikoku, and is an industrial city with waterfront industries such as shipbuilding. A railway ferry and scheduled shipping services run between Uno Ko and Takamatsu Ko; many eastbound and westbound vessels using Bisan Seto pass close to the harbor limits. A shipbuilding yard is situated on the SW side of the harbor. Hibi Ko, to be later [described in paragraph 7.35](#), lies SW of Uno Ko, and is included within the harbor area of Uno Ko.

Winds—Weather.—Several times between April and September there may be fog with a visibility of less than 0.15 mile; it can constitute an obstacle to shipping operations.

Tides—Currents.—In Katsurashima Suido, fronting Uno Ko, the tidal currents set S and N during the flood and ebb tide, respectively. The velocity of the current is about 2.5 knots at springs and 1.2 knots at neaps.

Depths—Limitations.—The piers in the N part of Uno Ko, which are marked by lighted ranges, are for the use of the ferries and hovercraft of the Japanese National Railway.

Pier No. 3, about 0.3 mile farther SW, can accommodate a vessel up to 15,000 grt, in depths of about 9.5m.

A floating drydock, in the SW part of the harbor, is 282.2m long and 47m wide, with a depth of 17.1m; it can accommodate a vessel of 80,000 grt. There is also a drydock 209m long and 32m wide, with a depth of 9.7m; it can accommodate a vessel of 27,700 grt.

Reclamation is in progress in several areas.

Aspect.—**Tera Shima** (34°28'N., 133°59'E.), in a bay at the NW end of Nao Shima, is 84m high and marked by a light at its N end. Kyonojoro Shima, about 0.5 mile NNW, was [previously described in paragraph 7.33](#).

Three islets, bordered by reefs, lie on the N side of the fairway; the SE islet, 6.1m high and the SW islet, 28m high, lie about 0.4 mile N and 0.7 mile NW of Tera Shima. Torino Se, with a least depth of 11.5m, extends about 0.5 mile SW of the SE islet.

Pier No. 3, about 0.7 mile W of the SW islet, has a conspicuous cliff close S and a gray chimney, 69m high, close N.



Katsura Shima Light

Katsura Shima (Kazura Shima), W of the harbor, is 105m high and sparsely wooded; a light is shown from its SE end. Tobi Su, a drying rock, about 90m long N-S, lies about 0.2 mile W of the W end of Katsura Shima, and is marked by a light near its S end.

Kojin Shima (Kozin Shima), about 0.5 mile S of Katsura Shima, is low, sparsely wooded, and 98m high in its W part. An overhead cable, with a clearance of about 57m, and with red and white pylons at each end, extends between Kojin Shima and Inumodari Hana, about 0.8 mile W. The latter point is 69m high, a light is shown close off the point.

Ushinoko Iwa, two rocks drying 0.2 and 0.7m, lie about 320m ENE from the SE extremity of Kojin Shima, and on the E side of the fairway; a light is shown from the NW end of Ushinoko Iwa.

Manaiti Ishi, a drying rock, marked by a light, lies about 0.5 mile S of the SE extremity of Kojin Shima. Hokake Iwa, a rock, 1.7m high and marked by a beacon, lies about 0.3 mile farther SW.

Signals.—The harbormaster can be contacted by radiotelephone.

Anchorage.—Anchorage is prohibited in the area of the ferry piers. A submarine water pipe extends from the NW end of Nao Shima to the NW part of Uno Ko.

Caution.—An overhead cable, with a clearance of about 34m, extends across the fairway from the NE end of Kojin Shima to Nao Shima.

7.35 Hibi Ko (34°27'N., 133°56'E.) ([World Port Index No. 61590](#)), about 0.8 mile W of Uno Ko, is included within the harbor area of that harbor.

Depths—Limitations.—There are depths of 1.8 to 3.1m within the breakwaters. Hibi Wharf, on the W side of the harbor entrance, is 170m long; it has a depth of 9.5m alongside and can accommodate a vessel up to 15,000 grt. Mitsu Hibi Wharf, farther W, is 170m long; it has a depth of 13m alongside and can accommodate a vessel up to 20,000 grt.

Aspect.—The large gray chimney of a refinery is conspicuous on top of a hill W of the harbor, and has an elevation of 156m. Two red and white chimneys, with elevations of 172 and 193m, are conspicuous about 0.2 mile S and E, respectively, of the gray chimneys. A red crane on Hibi Wharf is a good mark for approaching the wharf.

The coast between Hibi Ko and Kusumi Bana (Kusumi-no Hana), about 5.5 miles WSW, is indented by a large bay which is obstructed by a number of shoal and drying mudbanks. The small ports of Kotouro Ko and Ajino Ko lie at the head of the bay. Local knowledge is necessary for navigation within the bay. A number of fish havens exist up to 1.5 miles S of Kotouro Ko. Kusumi Bana is the N entrance point of the E entrance to Shimotsui Seto, which will be [described in paragraph 7.48](#) with Mizushima Traffic Route.

Tateba-jima (34°27'N., 133°51'E.), nearly 2 miles NE of Kus-mi Bana, is conical, 54m high, thickly covered with pine, and conspicuous from the S. Jimba Shima, two rocks, 3.1m high, lie about 0.5 mile E of the N end of Tateba Shima.

Naida Su, a drying mudbank, extends about 1 mile E from a point about 0.5 mile E of Tateba Shima. A mudbank, with depths of less than 4.9m and awash in its shallowest part at lowest LW, extends from about 1 mile S to SE of Tateba Shima; a lighted buoy marks its SW end. Two shoals, with depths of 3.1m, lie between the latter mudbank and the NE end of Kama Shima, about 1 mile WSW.

Shido Wan (Sido Wan) is entered between **O-gushi Saki** (34°22'N., 134°13'E.) and Goken San Hanto, about 2 miles W. The head of the bay is divided into two shallow bays by a well-wooded peninsula, 100m high. Shido Ko and Mure Ko are two local ports on the S and W sides, respectively, of the W bay. A bank, with depths of 5.7 to 7m, mud, sand, and shell, lies in the middle of the entrance to Shido Wan.

With the exception of the fairways to Shido Ko and Muro Ko, Shido Wan is occupied by seaweed (October to April), fish (May to January), and oyster cultivation grounds.

Takamatsu Ko (34°21'N., 134°03'E.)

[World Port Index No. 61940](#)

7.36 Takamatsu Ko (Takamatu Ko), a specified harbor, fronts the city of Takamatsu (Takamatu). The harbor, the gateway to Shikoku, has the most frequent arrivals and departures of scheduled shipping services of all the harbors in the Naikai. In particular, there are vessels and car ferries running to Uno Ko on the Honshu side and scheduled passenger services to the Hanshin region, the Sanyo region, and the surrounding islands. There are also calls by scheduled passenger services running

between the Hanshin (Osaka/Kobe) region and Kyushu. Shipping is frequently congested in the harbor entrance.

Takamatsu Ko consists of an inner harbor, sheltered by a W, central, and E breakwater; two tanker piers, sheltered by a breakwater, N of the reclaimed land E of the E breakwater; a large wharf, E of the tanker pier; and a fishing harbor, about 1 mile W of the inner harbor. A detached breakwater lies NW of the tanker piers.

Takamatsu Fairway, a statutory fairway, runs between the W and central breakwaters from the N, with a width of about 180 to 230m, and with depths of 7.9 to 10.1m.

Tides—Currents.—The mean tidal rise at Takamatsu is 2.3m at springs, and 1.8m at neaps.

The tidal currents outside the breakwaters set nearly E and W, with a velocity of about 0.8 mile in Bisan Seto.



Takamatsu Bridge



Takamatsu Ko

Depths—Limitations.—The W side of the large wharf has a berthing length of 370m, with depths of 9.5 to 10.1m along-side, and can accommodate vessels up to 10,000 dwt.

Central Wharf, on the S side of the inner harbor, can accommodate vessels of 3,000 dwt in depths of 6.5 to 7m on its N and W sides.

Aspect.—Nebutono Hana (34°24'N., 134°07'E.), the E entrance point of Yashima Wan (Yasima Wan), is 88m high to the treetops; a lighted buoy is moored off the point. Mae Se, a sandspit with depths of 4.3 to 6.3m, extends from the coast to about 0.5 mile NE of Nebutono Hana; there are normally tide rips at its outer end and the noise of the tidal current is very loud during the strongest period of the flood and when there is an E wind.

Nagasaki Hana, the W entrance point of Yashima Wan, has a bare rock, 9.1m high, at its extremity.

Yatake Shima, flat-topped and 22m high, lies about 1.5 miles N of Nagasaki Hana, off the NW side of O Shima.

Noyama Dashi, with a depth of 7.6m, lies in the middle of the fairway W of O Shima, and about 0.5 mile NNW of Tatake Shima. A rock, with a depth of 7.7m, lies about 0.4 mile SW of Noyama Dashi, and a bank, with least depth of 8.4m, lies about 0.4 mile farther SSW. A pinnacle rock, with a depth of 4.9m, lies about 0.5 mile WSW of Tatake Shima. Rocky ledges, with a least depth of 2m, extend about 0.8 mile WSW from the SW end of O Shima.

Megi Shima, about 2 miles W of O Shima, rises to an elevation of 217m in its SW part, and is marked by a light at its SW end.

Masuno Mo, a sandspit with depths of 0.2 to 5.4m, and partially drying, extends SW from a position about 1.3 miles E of the N end of Mega Shima to the SW end of the same island. A fish haven is situated off the E coast of Megi Shima.

Inagi Dashi, a bank with a least depth of 4m, and marked NE by a lighted buoy, lies about 0.8 mile SW of Nagasaki Hana; depths of less than 10.1m extend about 0.3 mile NE, and 0.8 mile SW of the bank. An isolated patch, with a depth of 7.9m, lies about 1 mile W of Nagasaki Hana.

A chimney, 32m high, and a crane are conspicuous in the SE part of the large wharf.

Floodlights of the Takamatsu Railway Station are conspicuous about 0.8 mile WSW of Central Wharf.

Shiun Yama, 200m high, about 2 miles SSW of the head of the W breakwater, is a good mark when entering the harbor from the E.

Naka Se and Kama Se, in the W entrance to the harbor, were [previously described in paragraph 7.29](#) with Bisan Seto East Traffic Route.

A lighted buoy is moored in the N entrance to Takamatsu Fairway.

Pilotage.—Pilotage is not compulsory. Inland sea pilots are available at Wada-Misaki, Hesaki, or Sekisaki and harbor pilots are available at the anchorage from 1 hour before sunrise to 1 hour before sunset. Call "TAKAMATSU-HO-AN" on VHF channels 16 and 12. [For further information, see paragraph 6.1.](#)

Regulations.—Vessels intending to proceed inside Takamatsu Ko breakwaters should enter through the W entrance. Vessels should leave through the E entrance. However, vessels

of over 1,000 grt may leave by the W entrance, provided they are equipped with lights which are able to make flashing signals.

Vessels should keep to the starboard side of the fairway. Vessels leaving by the E entrance, except working boats and fishing boats of less than 10 grt, must not cross Takamatsu Fairway.

When there is danger that vessels leaving by the W entrance may encounter other vessels in the vicinity of the N entrance to Takamatsu Fairway, such other vessels shall keep out of the path of vessels leaving by the W entrance.

Signals.—Communications regarding harbor operations can be made by radiotelephone with the harbormaster.

Anchorage.—Anchorage information is given in the accompanying table.

Anchorage	Length	Depth
No. 1	220m	11.0m
No. 2	250m	11.0m
No. 3	250m	10.5m
No. 4	200m	10.0m

Directions.—Takamatsu Ko is reached by the East Fairway, West Fairway, and Central Fairway.

East Fairway, between Nebutono Hana and the islands NW, is the route normally used by small vessels and by scheduled shipping services from the Hanshin (Osaka/Kobe) area.

West Fairway is the one normally used by the Uno to Takamatsu JNR ferries and other car ferries going to Takamatsu Ko from Uko West Fairway, and passing S of Megi Shima.

Central Fairway from the N is between Megi Shima and O Shima, and is the route normally used by scheduled shipping services from the Tonosho Ko region, crossing Bisan Seto East Fairway to Takamatsu.

Vessels coming from the E should pass W of Inaga Dashi and the dangers SW, keeping clear of Masuno Mo; to reach the N entrance to Takamatsu Fairway, approach with the center of Yatake Shima in range with the NW extremity of O Shima, bearing 043° astern.

[See "Bisan Seto East Traffic Route" in paragraph 7.29](#) for descriptions of Naka Se and Kama Se and special regulations for entering, crossing, and leaving that traffic route.

Sakaide Ko (34°20'N., 133°51'E.)

[World Port Index No. 62110](#)

7.37 Sakaide Ko, a specified port, lies on the S side of the central part of Bisan Seto. The harbor fronts the city of Sakaide, an important manufacturing city, and an assembly and distribution point. The harbor consists of an inner harbor, sheltered N by reclaimed land extending to close S of the main route through Bisan Seto. Banno Su Hakuchi, a large basin, is entered from the N side of the reclaimed land, then extends SW. A shipyard lies on the W side of the inner harbor.

The main harbor of Sakaide Ko is approached from a position between **No Misaki** (34°23'N., 133°54'E.) and a shoal, with a least depth of 7.8m, lying 0.75 mile E of Kosei Shima.

An underwater intake pipeline extending 0.2 mile NW from the shore is situated at the SW extremity of Berth A. Its seaward end is marked by a lighted buoy. A light is shown from the corner of the berth 0.2 mile ESE of Berth A.

Winds—Weather.—The area is surrounded by mountains and islands, and the interior of the harbor is tranquil even in the winter monsoon winds; however, swells enter the harbor with strong N winds. The most common wind direction throughout the year is WSW, followed by SE.

Tides—Currents.—The mean tidal rise at Sakaide is 3.1m at springs, and 2.4m at neaps. The tidal currents within the harbor have become weak due to the reclamation work.

Depths—Limitations.—Mitsubishi Kasei Berth A, the NE berth on the SE side of Banno Su Hakuchi, has a berthing length of 275m, with a depth of 13m alongside, and can accommodate a vessel up to 40,000 grt. Berth B, close SW, has a berthing length of 200m, with a depth of 13m alongside, and can accommodate a vessel up to 30,000 dwt.

There are least depths of 12.8m on the entrance range leading to the above-mentioned Berth A and Berth B. There are least depths of 12m in Banno Su Hakuchi, except near its head.

Asia Joint Oil Company Berth No. 2, the NE berth on the NW side of Banno Su Hakuchi, can accommodate tankers of 75,000 dwt, a in depth of about 12.5m. Berth No. 5, nearly 0.5 mile farther SW, can accommodate vessels up to 75,000 dwt, in a depth of 12m.

Asia Kyodo Sekiyu Berth No. 1, a dolphin berth, close W of the entrance to Banno Su Hakuchi and parallel to the seaward face of the reclaimed land, has a depth of 19.5m alongside and can accommodate vessels up to 100,000 dwt. A light is shown from the center of the berth and a light is shown and a fog signal sounded at each end.

A drydock at Sakaide Ko is 450m long and 72m wide, with a depth of 9.2m, and can accommodate vessels up to 270,000 dwt.

Central Pier is situated on the S side of the inner harbor, with the harbor office on its SE side.

Wharf	Depths alongside
Central Pier No. 1	9.4m
Central Pier No. 2	5.9m
Central Pier No. 3	3.9-5.2m
West Wharf	6.2-6.4m
East Canal Quay	2.6-4.6m
Zenno Quay	12.0m
Wharf A	12.0m
Wharf B	7.5-7.6m
Wharf C	5.4-6m
Wharf D	5.0m

Aspect.—Sei-jima (Seizima) (34°21'N., 133°51'E.), 112m high and well-wooded, lies at the NE end of the reclaimed area.

Hijiri Iwa, 1.5m high, lies about 0.1 mile off the NW end of Sei-jima.

Ko-Sei Shima, 41m high and covered by pine trees, lies about 0.8 mile N of Sei-jima. A light is shown from the N end of the island. Depths of less than 4.9m extend up to about 135m off the N side of the island, and a sandbank, with depths of less than 10.1m, extends about 0.8 mile E of the island.

An oil refinery chimney, with an elevation of 158m and numerous oil tanks, are conspicuous on the N side of the reclaimed area.

Lights, in line bearing 181.5°, lead into Banno Su Hakuchi; the rear light is shown from a gray gas tank, 86m high. Lighted buoys are moored on each side of the entrance.

Tsuno Yama, 187m high and conical, is conspicuous about 3 miles S of Sei-jima. Inno Yama, about 2 miles farther S, is 422m high and conspicuous from a distance. Shotsuji Yama, about 1 mile NW of Tsuno Yama, is 117m high and surmounted by a conspicuous building (tourist center) and two steel pylons.

The large chimney of a salt company is conspicuous about 2 miles E of Sei-jima; it has an elevation of 120m and is painted red and white.

Pilotage.—Pilotage is compulsory for the Naikai area; those vessels entering or leaving the port are advised to retain a pilot on board. Pilots are available at the quarantine anchorage between 0700 and 1700 for vessels requiring pilot services. There is a liaison office of the Naikai Area Pilot Association at Sakaide.

Call "SAKIDE-HO-AN" on VHF channels 16 and 12. A signal station, at the N end of Sei-jima, displays signals concerning vessels entering and leaving Banno Su Hakuchi, as well as signals concerning berthing facilities.

Anchorage.—The quarantine anchorage is centered about 1.8 miles E of Sei-jima. Permission to use this anchorage or any other in Sakaide Ko must be obtained from the Maritime Safety Agency at Takamatsu. Anchorage for vessels carrying dangerous cargo is designated by the harbor authorities in the harbor area SE of Sei-jima.

Bisan Seto North Traffic Route and Bisan Seto South Traffic Route

7.38 Bisan Seto North Traffic Route and Bisan Seto South Traffic Route, as established under Maritime Traffic Safety Law, lie between Ko Sei Shima, N of Sakaide Ko, and Mu Shima. Numerous islands of Shiwaku Shoto (Siwaku Syoto) border Bisan Seto North Fairway. Caution is necessary due to the many rocks and shoals, strong tidal currents, fishing boats, and heavy traffic.

In the above traffic routes vessels must navigate in accordance with the regulations established by the Maritime Traffic Safety Law. Under these regulations, vessels must proceed W in Bisan Seto North Traffic Route and E in Bisan Seto South Traffic Route.

Mizushima Traffic Route crosses or joins the above traffic routes in the E part, and many large vessels enter and leave Sakaide Ko and Mizushima Ko. Considerable caution is necessary and there are special regulations and signals.

A bridge spans Bisan Seto from the S side of Honshu, near Kusomino Hana, to the N side of Shikoku, near Sakaide.

There is a vertical clearance of 65m in both Bisan Seto North Traffic Route and Bisan Seto South Traffic Route.

Bisan Seto North Traffic Route—Aspect

7.39 Yo Shima (34°23'N., 133°49'E.), close to the intersection of Bisan Seto North Traffic Route and Mizushima Traffic Route, has a 72m high summit at its NW end; there are many red-colored cliffs resulting from quarrying operations. Mizushima Fairway-Yo Shima control station, a white building with a flagstaff, lies near the SW end of the island. O-yo Shima (Koyo Shima), 48m high, lies about 0.3 mile E of Yo Shima.

Nabe Shima, close SE of Yo Shima, is a flat-topped islet, 22m high, marked by a light at its center. It is comparatively steep-to on its S side; there are drying and submerged rocks close off the E side of the island, the highest drying 2.6m. Due to the bridge piers of the Bisan Seto Bridge, Nabe Shima Light is obscured between the bearings 358° to 014°. The observation platform on Washua Yama, 133m high, about 2.5 miles N of Yo Shima, is conspicuous.

Ushingano Se (Usingano Se), a rock with a depth of 18.4m, lies on the S side of the fairway, about 0.4 mile S of Nabe Shima.

Mitsugo Shima (Mitugo Shima), about 0.5 mile S of Nabe Shima, consists of three wooded, rocky islets. The two N islets, from E or W, appear to be joined. The W islet of the two is 19m high, marked by a light, and has a wooded, pointed rock close off its E side; the E islet is 14.9m high and somewhat smaller. The S island is 19m high to the treetops, with a low rock on its W side. The group is bordered by shoals extending up to 0.1 mile offshore. Mitsugo Sashi (Mitugo Sasi), steep-to on its N side and with a least depth of 4m, extends about 0.5 mile W of Mitsugo Shima. Mitsugo Shima and Mitsugo Sashi are marked by a number of lighted buoys.

Inosakino Tsugai, a spit, with depths of less than 20m and about 0.1 to 0.3 mile wide, extends about 1.3 miles WNW from Mitsugo Sashi and has sandwaves in the vicinity. Its least depth of 10.1m lies in Mizushima Traffic Route, about 0.8 mile W of Mitsugo Shima Light, and is surrounded by depths of 11 to 14m. Within Bisan Seto North Traffic Route the depths are 17.1 to 20m. In addition, the tidal currents are strong and sandwaves are liable to cause changes in depths in this area.

7.40 Hon Shima (34°23'N., 133°47'E.), nearly 1 mile W of Yo Shima, rises to Takamubo Yama, 200m high, in its N part, and to a 204m hill in its SW part. Kuro Hana lies at the S extremity of the island, and Kaburasaki Bana, a white, round-topped rocky point, 39m high, is conspicuous at the SW end of the island. A lighted buoy is moored about 90m SE of Kuro Hana, and Kurohanano Iso (Kurobana-no-Iso), with a least depth of 18.6m, extends about 0.3 mile SSW of Kuro Hana.

An overhead power cable, with a vertical clearance of 72m, crosses the North Traffic Route between the S end of Hon Shima and Ushi Shima.

A light is shown on the head of a breakwater at **Honshima Ko** (34°22.7'N., 133°47.3'E.). Kasashima is a small harbor on the NE coast of Hon Shima, 0.8 mile N of Honshima Ko. It is protected by breakwaters, including a detached outer breakwater from which lights are shown at both ends.

Ushi Shima, about 0.8 mile SE of Kuro Hana, has two summits. The NW summit is 95m high, with a steel pylon in the vicinity, and the SE summit is 111m high. A light is shown on the head of a breakwater, which extends N from the N extremity of the island; from a distance, this light structure appears isolated and quite separated from the island.

Okino Su, a sandspit with a least depth of 2.8m, extends about 2.5 miles WSW from a position about 0.2 mile SW of Ushi Shima. Farther W, depths of less than 10.1m extend to Takami Shima; on this bank lies Kojimadashi Se, two heads, with depths of 2.7 and 4.6m, and depths of less than 4.9m extending about 0.8 mile ENE of Takami Shima.

Hiro Shima lies about 1.5 miles W of Hon Shima. Sono Su, between the two islands, has depths of less than 4.9m, and dries for about 1 mile in its central part. There are landslides on the S end and W coast of Hiro Shima caused by quarrying and timber cutting. Dondoro Yama, 312m high in the S part of Hiro Shima, has a precipice on its S side; a pointed peak, 207m high, farther W, is conspicuous from the SE to SW.

Habushi Iwa (Habusi Iwa), a white rock, marked by a light, lies near the S limit of Bisan Seto North Traffic Route, S of Hiro Shima. A rock, with a depth of 9.2m, lies inside the traffic route, about 410m ENE of Habushi Iwa.

Habushi Iwa Light, in line bearing 300° with the SW end of Hiro Shima, leads in depths of over 8.5m in the channel W of Okino Su.

7.41 Ko Shima (34°20'N., 133°39'E.), a wooded, conical island, 154m high, lies about 2.5 miles WSW of Hiro Shima. Sanagi Shima, W of Ko Shima, is 249m high, with Kongo Hana, a steep, cliffy point, about 18m high, at its S end.

Kawara Su, a sandspit extending about 2.5 miles E of Sanagi Shima, has depths of less than 2m in many parts; it dries in places between Ko Shima and Hiro Shima.

Depths of less than 10.1m extend about 1 mile off the SW end of Sanagi Shima. A wreck, with a depth of 10.1m, lies about 0.5 mile S of the S end of Sanagi Shima. Wrecks, with depths of 13.7m and 14.6m, lie nearly 2 miles SW and 1.8 miles WSW of the S end of Sanagi Shima.

Takami Shima, about 1 mile SE of Ko Shima, borders the S side of Bisan Seto North Traffic Route. A light is shown on the NW extremity of the island. Ryuono Mori, 298m high, the summit of the island, lies in its SE part. A sandbank, with depths of less than 2m, lies between Takami Shima and Futaomote Shima. No. 3 Lighted Buoy (port hand) is moored close SE of the shallowest part of this bank. A fish haven is situated 1.25 miles N of No. 3 Lighted Buoy.

Futaomote Shima, about 2.5 miles WSW of Takami Shima, is an islet, 24m high, with two grassy summits. It lies between the W entrances of Bisan Seto North Traffic Route and Bisan Seto South Traffic Route. The islet is surrounded by drying and submerged rocks. A light is shown from drying rocks, about 0.3 mile NE of Futaomote Shima.

Mu Shima (34°18'N., 133°32'E.), about 4.5 miles WSW of Sanagi Shima, is 185m high, and marked by a light at its S end. It lies at the N end of the recommended route. A submarine cable runs from the NE point of Mu Shima to Manabe Shima, about 3.5 miles NE.

Nezura Iwa, a rock, drying 1.7m and marked SE by a lighted buoy, lies about 0.8 mile W of the S end of Mu Shima.



Mu Shima Light

Habu Shima, 56m high to the tops of the trees, lies about 1 mile NNW of Mu Shima. Depths of less than 10.1m surround the island. Asa Se, with a least depth of 3.5m, lies about 0.2 mile NE of Habu Shima. Misaki Dashi, an isolated rock with a depth of 3.9m, lies about 1 mile NE of Habu Shima.

O-Tobi Shima (O-Bi Shima), 152m high, lies about 1 mile NNW of Habu Shima; a depth of 10.1m lies about 0.2 mile off the SW side of the island. A sandbank, most of which dries, extends about 0.2 mile E of the island.

Ko-Tibi Shima (Ko-Bi Shima), 80m high, lies about 0.5 mile ENE of O-Tobi Shima. The E part of the channel between the islands has depths of over 10.1m. Depths of less than 10.1m extend about 0.1 mile off the W side of Ko-Tibi Shima; a depth of 6.7m lies about 0.3 mile NNW of the island.

Mi Saki lies about 2.5 miles SE of Mu Shima and is marked by a light at its W end. Heavily-wooded hills extend SE of the point, gradually rising to Shiunde San (Siunde San), the summit of the peninsula, about 2 miles ESE. The peak, 352m high, with an observation platform, is a bare mountain with a Mount Fuji shape, and appears as an island from the Kurushima Kai-kyo area.

Ogo Ishi, about 0.1 mile W of Mi Saki, consists of two rocks; the outer rock is 1.8m high, and the inner one is 4m high.

Bisan Seto South Traffic Route—Aspect

7.42 Awa Shima lies with its N extremity (34°17'N., 133°38'E.) nearly 1 mile S of Futaomote Shima. It has N, S, and E summits. Ashima Yama (Asima Yama), 181m high and

conical, is the N summit. The S and highest summit is Shirono Yama (Zvo-no Yama), 222m high.

In the traffic route between Awa Shima and Ushi Shima, about 5 miles ENE, there are, in general, dredged depths of 12.4m or more, except for a sandbank, with a least depth of 11.2m, about 410m SE of Takama Shima; Kojimadashi Se, [previously described in paragraph 7.40](#), and Okinu So border the N side of the traffic route, and an extensive bank, with depths of less than 10.1m, borders the S side of the traffic, between Tadotsu Ko and Marugame Ko.

A sandbank, with a least depth of 1.2m, extends to 1.25 miles WSW of the SE end of Takami Shima.

Okinonaka Se, a sandbank with two heads and with a least depth of 4.2m, lies about 1.5 miles E of the S end of Takami Shima; it is reported to move under the influence of the tidal current.

Takamimae Se, with a depth of 8.2m, lies about 1 mile SE of Takami Shima.

Bisan Seto North Traffic Route and Bisan Seto South Traffic Route—Regulations

7.43 Vessels navigating in Bisan Seto North Traffic Route are to proceed in a W direction; vessels navigating in Bisan Seto South Traffic Route are to proceed in an E direction.

Vessels leaving or entering a traffic route should not alter course in the vicinity of the entrance points.

Vessels navigating in Mizushima Traffic Route should, as far as practicable, keep to the right of the center of the traffic route.

Vessels, other than a huge vessel (vessels of 200m or more in length) and vessels engaged in fishing or other operations when navigating in Mizushima Traffic Route, shall keep out of the way of a vessel navigating in Bisan Seto North Traffic Route.

Vessels, other than huge vessels, navigating in Bisan Seto North Traffic Route, shall keep out of the way of huge vessels navigating in Mizushima Traffic Route.

At the intersection of a junction of a traffic route, all vessels should keep out of the way of a huge vessel navigating the traffic route.

Fishing vessels navigating in Mizushima Traffic Route should keep out of the way of vessels proceeding W in Bisan Seto North Traffic Route.

[See paragraph 7.20 for further vessel limitations](#) in Bisan Seto North Traffic Route and Bisan Seto South Traffic Route.

Marugame Ko (34°18'N., 133°47'E.)

[World Port Index No. 62100](#)

7.44 Marugame Ko lies about 4 miles SW of Sakaide Ko, S of Bisan Seto South Traffic Route. The harbor lies between Kami-ma Shima, a bowl-shaped islet, 36m high, and Shimo-ma Shima, an islet, 32m high, about 1.5 miles WSW. It is an industrial harbor, with a shipyard in its NW part.

Depths—Limitations.—Dredged depths of 7.5m lead to the E side of the reclaimed area, where there are berths with depths of 7.5m alongside.

The W side of the reclaimed land has dredged depths of 11m in the outer part, with a depth of 9m alongside berths on the W side of the reclaimed land.

A drydock at the shipyard is 290m long and 57m wide, with a depth of 6.8m; it can accommodate vessels up to 80,000 grt.

Aspect.—A radar station, housing the Bisan Seto Traffic Advisory Service Center has been established (34°18'N., 133°49'E.). A chimney, 103m high, is conspicuous about 0.2 mile NE of the range lights. The keep of Marugame Castle, about 0.8 mile farther SSE, is 83m high, painted white, and floodlit. Eight silos, 33m high, are conspicuous about 0.8 mile SW of Kami-ma Shima. Seven cranes, painted pale blue, with red and white derricks, are conspicuous E of Shimo-ma Shima.

Tadotsu Ko (34°17'N., 133°45'E.)

World Port Index No. 62090

7.45 Tadotsu Ko (Tadotu Ko), about 3 miles WSW of Marugame Ko, consists of an inner harbor which is protected by breakwaters; a light is shown at the head of each breakwater. Tadotsu Ko is bordered by large areas of reclaimed land E and W. It is an industrial harbor with a shipyard.

Depths—Limitations.—Jetties on the W side of the E reclaimed area have depths of 6 to 7m alongside. A wharf at the base of the inner harbor W breakwater has a berth, 105m long, with 6m alongside. A jetty on the W side of the W reclaimed area has depths of 7 to 10.1m alongside.

Aspect.—Ogi Yama, thickly wooded and 93m high, is conspicuous close inland of the inner harbor. Oil tanks are conspicuous on the W side of the W reclaimed area.

An overhead cable, with a vertical clearance of about 59m, crosses the harbor 0.4 mile within the entrance.

Directions.—Ogi Yama, bearing 158°, leads into the inner harbor.

Takuma Ko

7.46 Takuma Ko (34°15'N., 133°40'E.), about 3 miles SW of Tadotsu Ko, is an open port, divided into two parts by a peninsula. Koya Hana, the NE extremity of the peninsula, is a white steep cliff, 65m high. The E part of the harbor is an industrial and timber harbor. With strong N winds, the handling of cargo in the roadstead is reported to be difficult.

Depths—Limitations.—Draft limitation in the channel is 11m at high tide. Takuma No. 1 Berth and Takuma No. 2 Berth have depths alongside of 5.5m and 7.5m, respectively. The length of Takuma No. 1 Berth is 90m; the length of Takuma No. 2 Berth is 130m. The wharves lie on the E face of the reclaimed land on the W side of Takuma Ura. There is also reclaimed land forming a basin on the E side of Takuma Ura.

The anchorages for timber discharge can accommodate drafts of 8 to 11m; the three anchorages, designated A, B, and C, lie inside the harbor limit, W of Iwa Shima.

Aspect.—Range beacons are situated at the N end of a promontory on the S side of Takuma Ura. The beacons, in line bearing 166°, lead through the fairway, marked by lighted buoys (port and starboard hand), in depths of at least 7.5m, to a position close NE of Takuma No. 1 Berth and Takuma No. 2 Berth.

Shishi Shima (Sisi Shima), about 1 mile N of Koya Hana, is heavily wooded and 109m high. Shishinomosaki (Sisi-no-Mo

Saki), with depths of less than 4.9m, extends about 1.8 miles ENE of Shishi Shima.

Anchorage.—The best anchorage around Awa Shima is on the S side of the island. Anchorage can be taken, in 5 to 10.1m; care should be taken to avoid Taishino Mo, a bank, with a least depth of 1.8m, in the entrance to the bay. Anchorage can be taken, in depths of 11 to 15m, as convenient, between this bay and the Shikoku coast. Anchorage can be taken by vessels with a draft up to 9.2m, in depths of 10.1 to 11.8m, N of Koya Hana, within the harbor limit.

Large vessels should approach the anchorage from the W, passing between the SW end of Awa Shima and the Shikoku coast SW.

Mizushima Traffic Route

7.47 Mizushima Traffic Route (Mizushima Traffic Route), specified by the Maritime Safety Law, extends from Bisan Seto North Traffic Route and Bisan Seto South Traffic Route to Mizushima Ko. It is the route normally used by large tankers proceeding to and from Mizushima Ko.

Caution is necessary, as many small vessels in Shimotsui Seto cross the traffic route; there are also strong tidal currents flowing E and W.

Lighted buoys mark the traffic route.

7.48 Mitsugo Shima (34°22'N., 133°49'E.), Mitsugo Sashi, Yo Shima, and Nabe Shima have been [previously described in paragraph 7.39](#).

Kameyanna Hanana Asari (34°23'N., 133°48'E.), rocks, with depths of 3.6m and marked E by a lighted buoy, lie about 0.3 mile SE of the E extremity of Hon Shima.

Wasa Shima, 32m high, and Ikuro Shima, 26m high and densely wooded, lie close NW and 0.75 mile N, respectively, of Yo Shima. A sandy shoal, with a least depth of 7.7m, and about 0.4 mile long N-S, lies about 0.4 mile W of Wasa Shima, close E of the traffic route.

Hitsuishi-jima (Hituisi Shima), 78m high, lies about 0.3 mile N of Ikuro Shima. Besai Tsugai, a sandbank, with a least depth of 13.4m, lies W of Hitsuishi-jima. Bridges, with vertical clearances of 31m, connect Wasa Shima, Ikuro Shima, and Hitsuishi Shima. Fixed red and green lights mark the outer limits of the fairway under the bridge.

Mukaekasa Shima, Naga Shima, and Mukuchi Shima, respectively, border the W side of Mizushima Traffic Route. A red-colored, pointed rock lies on the N side of Mukaekasa Shima. A rock, drying 3.1m, lies about 0.2 mile N of the E end of Naga Shima, and close W of the traffic route. Mukuchi Shima (Mukuti Shima) is 125m high in its S part and marked by a light at its NW end.

Shimotsui Seto (Simotui Seto) intersects Mizushima Traffic Route from the E. The passage is deep and free of dangers, but the tidal currents exceed a velocity of 3 knots. Many small vessels use the passage, and vessels over 100 grt must show destination signals and give sound signals when entering, leaving, and crossing Mizushima Traffic Route.

A bridge, with a vertical clearance of 31m, spans Shimotsui Seto between the N end of Hitsuishi Shima and the mainland NNE. Bridge lights mark the center and outer limits of the fairway under the bridge.

The W entrance of Shimotsui Seto lies between Mukuchi Shima and Nishino Saki, about 0.8 mile NE. The latter point is 55m high, with a conspicuous cliff. The E entrance to the passage lies between Kusumi Bana and **Kama Shima** (34°25'N., 133°50'E.), about 0.5 mile SE. Matsu Shima, 27m high, about 0.5 mile WNW of Kama Shima, lies on the S side of the passage.

Kusumi Bana (Kusumi-no Hana) is marked by a light at its SE end. Washiu Zan, 133m high, lies about 0.8 mile WNW of Kusumi Bana; there is an observation platform, a hotel, and a tourist road on Washiu Zan. Exposed red-colored rocks, between the hill and the point, are good landmarks for Shimotsui Seto from the E.

7.49 Noji Shoto (Nozi Syoto) (34°27'N., 133°45'E.), close NW of Mizushima Traffic Route, consists of four islets, extending for about 1 mile in a NW direction from a position about 0.8 mile N of the N end of Mukuchi-jima. The islets, from SE to NW, respectively, are Kami-noji Shima, 33m high; Futo-noji Shima; Hoso-noji Shima; and Isaro-noji Shima. A rock, drying 0.9m, lies about 115m N of Isaro-noji Shima. The islets lie on the W side of the entrance to Mizushima Ko.

Regulations.—A speed limit of 12 knots is in effect for vessels navigating in Mizushima Traffic Route from the junction with Bisan Seto Traffic Route N to the harbor limit of Mizushima Ko.

See [paragraph 7.20 for further vessel limitations](#) in Mizushima Traffic Route.

Pilotage.—Pilotage is compulsory.

Signals.—Shapes or lights are shown from the signal station at the SW end of Yo Shima, and at Nishino Saki, on the N side of the W entrance to Shimotsui Seto. When signals cannot be made from the above signal stations, they will be shown from a vessel of the Maritime Safety Agency.

Caution.—Shoaling has been reported in the traffic route approaches, check local chart for depth changes.

Mizushima Ko (34°30'N., 133°45'E.)

[World Port Index No. 61595](#)

7.50 Mizushima Ko (Mizusima Ko), a specified harbor, has been constructed on reclaimed land fronting the mouth of Takahashi Kawa. It is an industrial harbor developed in conjunction with the establishment of heavy industry zones. Tamashima Ko, included within the harbor area of Mizushima Ko, lies W of Takahashi Kawa and will be [described later in paragraph 7.51](#).

Winds—Weather

The climate is temperate and the sea in the harbor is generally calm; even during the winter monsoon, there is no problem in handling cargo in the harbor. It receives hardly any damage from typhoons and high tides.

Fog sometimes occurs in spring, but it disperses in 2 to 3 hours and is no obstacle to navigation.

Tides—Currents

The mean tidal rise at Mizushima is 3.3m at springs and 2.5m at neaps.

The flood current flows NW, and the ebb current flows SE. The maximum tidal current within the harbor is about 1 to 1.5 knots.

Depths—Limitations

The statutory fairway (Konai Passage), established by Maritime Traffic Safety Law, extends from Mizushima Traffic Route to the inner harbor; it is about 3 miles long, with depths of 14.7 to 23m.

A shoal area, with depths of less than 10.1m, lies S of Katura Shima, on the E side of the fairway. There is a channel, with depths of over 10.1m and marked by buoys, E of the shoal area. The W side of the shoal area is steep-to, and care is necessary.

Seto Wharf A, NE of Katsura Shima, has a berthing length of 285m, with a depth of 14m alongside, and can accommodate vessels up to 12.3m draft and 75,000 dwt.

Nippon Mining No. 2 Oil Jetty, in the SW part of the inner harbor, has a depth of 17.2m alongside, and can accommodate tankers up to 240,000 dwt, with a maximum draft of 16.5m.

Tokyo Steel Wharf A, in the NE part of the inner harbor, has depths of 10 to 11m alongside, and can accommodate vessels up to 54,000 dwt, with a maximum draft of 11m.

Nishi Nihon Grain Center, in the NW part of the inner harbor, has depths of 11.2m alongside, and can accommodate vessels up to 60,000 dwt, with a maximum draft of 11.5m.

Mitsubishi Oil Jetty No. 6, on the W side of the inner harbor, has depths of 16.3m alongside, and can accommodate tankers up to 240,000 dwt, with a maximum draft of 16.5m.

Kawasaki Steel Wharf, on the S side of the basin on the W side of the inner harbor, has depths of 17.1m alongside, and can accommodate vessels up to 200,000 dwt, with a maximum draft of 16m.

Kawasaki Steel Wharf T, on the E side of the mouth of Takahashi Kawa, has depths of 10.9m alongside, and can accommodate vessels up to 30,000 dwt, with a maximum draft of 10.9m.

Aspect

Katsura Shima (Katura Shima) (34°28'N., 133°46'E.), 51m high, is conspicuous on the E side of the entrance to Mizushima Ko. Two gantry cranes, each 81m high and painted red and white, are conspicuous at a shipyard farther N. A signal station, painted white, stands on Taka Shima (Takasima), a hill, 59m high, farther N.

A chimney, 166m high and painted red and white, is conspicuous on the E side of the inner harbor, about 3 miles NNW of Katsura Shima.

Refineries with numerous chimneys are conspicuous on the E side of the main fairway.

Noji Shoto was previously described in paragraph 7.49. Kami-Mizu Shima, 51m high, on which there are the ruins of a chimney, lies about 1.5 miles WNW of Isaro-noji Shima, the NW islet of Noji Shoto. Shimo-Mizu Shima (Simo-Mizu

Shima), 58m high, lies about 0.8 mile W of Kami-Mizu Shima; its summit, covered with pine trees, appears black.

Lighted buoys mark the channels and some of the basins.

Pilotage

Pilotage is compulsory for vessels over 10,000 grt. The Harbor Pilot is available during daylight hours only, and boards vessels in the quarantine anchorage. The pilots can be contacted on VHF channels 16, 12, and 14. [For further information, see paragraph 6.1.](#)

Signals

Communications regarding harbor operations may be made by radio or radiotelephone with the harbormaster.

Navigation control signals for the harbor fairway are shown from the Mizushima Signal Station on Taka Shima.

A liaison office of the Naikai Pilotage Area Pilots Association is situated at Mizushima.

Anchorage

The quarantine anchorage lies W of Noji Shoto and has depths of 14.8 to 21m.

Tamashima Ko

7.51 Tamashima Ko (34°31'N., 133°41'E.), W of Taka-hashi Kawa, is included within the harbor area of Mizushima Ko. The harbor area is shallow except for the dredged fairways, and reclamation work is underway. A power station is situated near the SW end of the reclaimed land.

Depths—Limitations.—A fairway, with depths of about 4.9m, extends N from a position about 1.5 miles N of Shimo-Mizu Shima to the power station. Another fairway, with depths of 5.5 to 6.5m, leads N from a position about 2 miles NW of Shimo-Mizu Shima to the heavy industry factory on the W side of the reclaimed land.

Lighted buoys mark the fairways.

The fairway into Tamashima Ko leads to Wharf No. 1, Wharf No. 2, and Wharf No. 3, which have depths from 4 to 5.6m alongside. A reclamation area, marked by lighted buoys, is situated E of the fairway.

Aspect.—Two chimneys, 233m and 173m high, and painted red and white, are conspicuous in the vicinity of the power station. The power station lies in the E part of the reclaimed land on the E side of the harbor. A fairway, marked on the E side by lighted buoys (starboard hand) and on the W side by two lighted buoys (special), and with a least charted depth of 4.6m, leads to a basin on the S side of the power station.

Hachiman Yama, 34m high, lies at the W entrance of the river on the W part of the inner harbor. **Tamashima Light** (34°31'N., 133°40'E.) lies close E of Hachiman Yama.

Caution.—The fairways are dredged and shoal abruptly on each side.

Islands and Channels Northwest of the West Part of Bisan Seto

7.52 Kurotsuchi Seto (34°26'N., 133°31'E.), Shiraishi Seto, Kitagi Seto, and other passages lie about 14 miles W of Shimotsui Seto; the W entrances of the passages lead into Kasaoka Wan and Bingo Nada. Small vessels westbound often take passage from Shimotsui Seto, passing S of Ajiro Shoto, to reach Shiraishi Seto; small vessels eastbound take the reverse route. In addition, some large vessels proceeding to or from Mizushima Ko pass between Noji Shoto and Mukuchi-jima, between Gantsuga Se and Tokudakino Ishi, then N of Te Shima, and then between Manabe Shima and Sanaga Shima.

Mukuchi-jima (34°25'N., 133°46'E.) and Noji Shoto were [described in paragraph 7.49](#) with the Mizushima Traffic Route.

A sandbank, with depths of less than 10.1m, extends about 2 miles W of Mukuchi-jima; Mukuchi Se, the inner part, with depths of 1 to 4.9m, extends about 1 mile W of Mukuchi-jima. Gantsuga Se, with a least depth of 6.8m, lies close SW of the outer end of the sandbank. A lighted buoy is moored off the W end of the sandbank, and N of Gantsuga Se.

Ajiro Shoto (Ajiro Syoto) (37°27'N., 133°42'E.), about 2.5 miles W of Noji Shoto, consists of four rocky islets. Chabin (Tyabin), the N islet, is 26m high with one pine tree. O-bishaku (O-Bisyaku), the SW islet, is 26m high with one pine tree. The middle and SE islets are bare. Okino Ishi, a rock with a depth of 4.5m, and Tokudakino Ishi, a rock, with a depth of 4.3m, lie about 0.8 mile ESE and 0.5 mile SE, respectively, of O-bishaku. A lighted buoy is moored between the two rocks.

Shimo-mizu Shima, about 0.8 mile NNW of Ajiro Shoto, was [previously described in paragraph 7.50](#) with Mizushima Ko. Shimono Ishi, rocks, with a depth of 4.5m, lie nearly 2 miles ESE of Shimo-mizu Shima.

7.53 Yori Shima (34°28'N., 133°36'E.), about 4.5 miles W of Shimo-mizu Shima, has two summits; the E and higher summit is 81m high, pine-covered, and conspicuous from a distance. Aosa Yama, 250m high, about 1 mile farther W, is also conspicuous from a distance.

Kono Shima (34°27'N., 133°31'E.) is located about 3.5 miles WSW of Yori Shima. Its summit 302m high, surmounted by a TV tower, lies in the middle of the island and is a good landmark.

Konashimasoto Ko, on the S side of Kono Shima, is a small harbor protected by breakwaters and a light is shown from the head of the W breakwater. There is a chemical factory on its shore. The chimney of the chemical factory, 53m high, is conspicuous. Several jetties and wharves, fronting the factory, have depths of 4.9 to 5.8m alongside.

Anchorage.—Large vessels anchor, in 10.1 to 28m, sand, mixed with clay, off the harbor. Strong SE and SW winds raise a sea. The flood tidal current flows W, and the ebb tidal current flows E, with a maximum velocity of about 1 knot.

7.54 Taka Shima, about 1 mile S of Kono Shima, rises to an elevation of 77m in its NE part; a conspicuous shrine gateway stands on its summit. Sasude Shima, Moyaji Shima, and Inazumi Shima are islets which lie NE to SW, respectively, off the NW side of Taka Shima. Above-water rocks lie off the NW end of Sasude Shima. Overhead cables, with a vertical clear-

ance of 25m, connect Mayaji Shima with Sasude Shima and Taka Shima.

Kurotsuchi Seto (Kurotuti Seto), between Kono Shima and Taka Shima, is reduced to a navigable width of about 0.3 mile by Sasude Shima. The passage has depths of 12.8 to 32m, but there are depths of 7.6m in its E approach.

Shiraishi Seto (Siraisi Seto), between Taka Shima and Shiraishi-jima (Siraisi Shima), is about 0.8 mile wide, with generally deep water, but the navigable width is reduced by islets and submerged rocks. Strong tidal currents run between Taka Shima and Kotaka Shima.

Kotaka Shima, 41m high, lies about 0.2 mile SE of Taka Shima, and Kogochi Shima, 30m high, lies about 0.1 mile farther SE. Overhead cables, with a vertical clearance of about 22m, extend between the three islands. The E end of Kotaka Shima is bordered by drying rocks; the S side of Kogochi Shima is shoal, but with depths of over 10.1m about 0.1 mile offshore.

Okino-shira Ishi, a white rock, 7m high and marked by a light, lies about 0.3 mile SSW of Kogochi Shima. Kajikake, a rock, with less than 0.3m, lies about 0.2 mile SSW of Okino-shira Ishi.

Caution.—Kajikake is the most dangerous rock in this passage.

7.55 Hyakken Zowai, a rock marked by a light, lies about 0.3 mile SW of the SW end of Taka Shima; rocks extend to Tori Shima, 12m high, about 0.3 mile N.

The NW coast of Shiraishi-jima has depths of more than 10.1m about 0.1 mile offshore. Tako Zowai, with a depth of less than 1.6m, lies in the SW approach to Shiraishi Seto, about 1 mile WSW of the NW end of Shiraishi-jima.

Kanari-jima, 21m high, with a rock drying 0.2m close N, lies about 1.3 miles SW of the NW end of Shiraishi-jima. Rocks, with depths of 7.6m and 7.3m, lie between the above rock and islet.

Kitagi Seto, between Shiraishi-jima and Kitagi Shima, close SE, has a least navigable width of about 0.2 mile and mid-channel depths of 11.9 to 22m.

Kitagishima Ko, protected by two breakwaters, lies at the head of the bight on the E side of Kitagi Shima. A light is shown on the head of the N breakwater. A fish haven is situated close to the N entrance point to this bight. Temporary anchorage, sheltered from W winds, can be obtained in the bight, in depths of about 8m, mud.

A light is shown from the head of a breakwater which extends 0.15 mile N from a position midway along the NW shore of Kitagi Shima. A second light is shown from a breakwater head at Kanafuro Ko, in the NW part of Kitagi Shima.

Tateishi Yama, 171m high, the summit of Shiraishi-jima, lies in the S part of the island.

Tate Shima, a conical rock, 10.1m high, lies in the middle of the NE entrance to Kitagi Seto; several flat rocks extend about 0.1 mile NE of Tate Shima. Suzuki, with a depth of 6.4m, lies about 0.2 mile SW of Tate Shima.

Kajiko Shima, 39m high, lies in the SW approach to Kitagi Seto, about 0.8 mile W of the W extremity of Kitagi Shima; a rock, drying 3.1m, lies about 0.2 mile N of Kajiko Shima. Inuno Kashiro, a rock, drying 0.3m, lies about 0.4 mile SE of Kajiko Shima. Yokobe Shima, 17.1m high, lies about 0.7 mile ESE of Kajiko Shima.

Caution.—An overhead cable, with a vertical clearance of about 28m, crosses the narrows of Kitagi Seto.

7.56 Kitagi Shima (34°23'N., 133°32'E.), is easily recognized by its red-colored rocks caused by quarrying, and rises to an elevation of 226m in its central part.

The passage between Kitagi Shima and Manabe Shima has depths of 10.1 to 30m except for Oshimano Se, which has a depth of 8.9m and lies about 0.5 mile E of Shishi Saki.

A rock, with a depth of 3.7m, extends about 0.1 mile NW of Shishi Saki, the S entrance point of the bay on the E side of Kitagi Shima.

O Shima 57m high, joined by a sandy isthmus to Ko Shima, 64m high, close S, lies in the E entrance, about 1 mile E of Shishi Saki. A reef, with a depth of 6.4m at its outer end, extends about 0.2 mile NE of the NE end of O Shima. A reef, on which there is a rock, 3.5m high, extends about 0.1 mile SW of the SW end of Ko Shima. Modoka Shima, 29m high, lies about 0.2 mile E of Ko Shima.

Manabe Shima, about 1 mile SE of Kitagi Shima, rises to Shiro Yama, 131m high, its summit, at its N end. There are two hills in its W part; the S hill is 126m high. The coasts of the island are mostly cliffy and comparatively steep-to. There is a small harbor, protected by a breakwater, at the head of a bight on the N coast of the island. A light is shown from the breakwater head.

Toi Shima, 39m high to the tops of the trees, lies in the middle of the W approach, about 0.8 mile W of the W end of Manabe Shima. Meota Iwa, a group of rocks, drying up to 1.5m, lies about 0.3 mile NE of Toi Shima, and is steep-to except on its S side. Foul ground, with a rock drying 3.8m at its outer end, extends about 0.1 mile ESE of Toi Shima. Ozowai, a rock with a depth of 5.9m, lies about 0.3 mile SSW of Toi Shima. A rock 3.1m high, lies close N of Toi Shima, to which it is joined by a reef.